E1911-K25-053

MARTIN MARIETTA

0045388

MARTIN MARIETTA ENERGY SYSTEMS, INC.

POST OFFICE BOX 2003 OAK RIDGE, TENNESSEE 37831 -7440

March 7, 1991

Ms. Joan Kessner Westinghouse Hanford Company Office of Sample Management 2344 Stevens Drive Richland, Washington 99352

Dear Ms. Kessner:



Analytical Results Package on Project 90-034: Underground Storage Tanks Sample Analysis

Attached are the results on the Underground Storage Tanks samples, Project 90-034; received into the Analytical Chemistry Department (ACD) laboratories on September 21, 1990. Also attached are the Chain of Custody records for the samples, a list detailing the protocol utilized in performing these analyses (in accordance with agreements between the OSM and K-25 ACD) and sample identification information.

The results are reported on ACD's AnaLis report format per letter dated December 20, 1990. All data quality objectives were satisified on this project.

The arsenic, lead, and selenium analyses on samples E1911 and E1912, the semi-volatile analysis on sample E1911, and the pesticide analysis on sample E1912 are incomplete at this time. However, in order that the data deliverables package on the project not be delayed any longer, the remainder of the package is being released. Resolution of these analyses is pending.

ICP Metals

The Toxicity Characteristic Leaching Preocedure (TCLP) extraction was performed on the samples and the leachate was analyzed for TCLP metals by ICP in accordance with EPA-6010 protocol. All quality control criteria was applied to samles in the SDG. For this analysis, all instrument calibrations (SPCC and CCC) were within acceptable criteria. All internal matrix spike percent recoveries were within acceptable limits. Interference check samples results were within acceptable limits. Replicate analyses were conducted on samples in the SDG, and all relative percent deviations were within acceptable limits. All internal controls and check standards run during these analyses were well within the

acceptance limits. At present the ACD cannot report the ICP metals blank results through the AnaLis database; however, the calibration and reagent blanks for this run as generated by the ICP's data system are attached for your review.

Mercury

All the required quality control criteria was applied to the samples in the SDG. For this analysis all instrument calibrations (SPCC and CCC) were within acceptance criteria. The internal matrix spike percent recoveries for the TCLP analysis wre within acceptance limits. Interference check samples results were within acceptable limits. Replicate analyses were conducted on samples in the SDG and all relative percent deviations were within acceptance limits. All internal controls and check standards run during these analyses wre within the acceptance limits. At present the ACD cannot report the Mercury blank results through the AnaLis database, however it is required according to ACD QA/QC policy that no analysis result be reported for any element which is found in the prep blank above the data reporting limits. The raw data within the QA batch (SDG) for any particular analysis contains the prep blank data and is available upon request.

Semi-Volatiles: BNA

The samples were not extracted within the prescribed holding times; sample E1912 missing the holding time by forty-nine (49) days. Sample E1911 has not been analyzed for semi-volatiles. Once extracted the samples were subsequently analyzed within the prescribed holding times. All surrogate standards criteria were within percent recovery acceptance limits except those flagged on the AnaLis report in accordance with CLP protocol. All DFTPP tune criteria were within acceptance criteria. All "CCC" and "SPCC" components met acceptance criteria for both the initial and continuing calibration check samples. All internal standard areas were within acceptance criteria. All matrix spikes and matrix spike duplicates were within the acceptance requirements.

Volatiles: VOA

The samples were not analyzed within the prescribed holding times, missing the holding time by twenty-nine (29) days for sample E1912 and thirty-three (33) days for sample E1911. All surrogate standards criteria were within percent recovery acceptance limits. All BFB tune criteria were within acceptance criteria. All CCC and SPCC components met acceptance criteria for both the initial and continuing calibration check sample. All internal standard areas were within acceptance criteria. All matrix spikes and matrix spike duplicates were within the acceptance requirements.

Pesticides

The Toxicity Characteristic Leaching Procedure (TCLP) extraction was performed on the samples and the leachate was analyzed for pesticides. All required quality control criteria were applied to these samples and were within acceptance limits.

PCBs

All required quality control criteria was applied to these samples and were within acceptance limits.

Wet Chemistry: TCLP extraction, Flashpoint, pH

The TCLP extraction was performed by Method 1311. The proximate analyses were conducted in accordance with EPA approved methodology. All instrument calibrations were within acceptable criteria. Matrix spike percent recoveries were within acceptance limits of 75% - 125%. All internal controls were within criteria.

I certify that this data package is in compliance with the terms and conditions of the OSM's revised Statement of Work and letter dated December 20, 1990, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Sincerely,

Deborah L. Amburgey

Program Manager

Hanford Support Program

Devorah L. Andurgey

Clarence R. Kirkpatrick

Program Manager

Waste Management Analysis

Roy W. Morrow Department Manager

Analytical Chemistry Department (K-25)

Attachments

cc/attach:

D.L.Amburgey

S.R.Smith - RC

CC:

N.P.Buddin

S.W.Goza

H.H.Sullivan

PROTOCOL UTILIZED FOR ANALYSES OF UNDERGROUND STORAGE TANKS SAMPLES AND SAMPLE IDENTIFICATION FOR PROJECT 90-034

	Analysis	Protocol
A.	ICP Metals	EPA-6010
B.	Mercury	EPA-7470
C.	Semi-Volatiles	BNA (CLP) protocol
D.	Volatiles	VOA (CLP) protocol
E.	PCBs	EPA-8080
F.	Pesticides	EPA-8080
G.	Flashpoint	EPA-1010
H.	pH	EPA-9040
I.	TCLP Extraction	EPA-1311

Table 1.1 - Sample Identification Table for Project 90-034: Underground Storage Tanks Sample Analysis

Date Sam. Group Rec.	OSM Sample ID	Lab Sample ID	Matrix	Comments
9/21/90	E1911 E1912	900924-182 900924-183 901004-038 901008-116 901010-117	liquid solid blank blank blank	VOA blank for 900924-183 VOA blank for 900924-182 TCLP reagent blank for 900924-183 and 901015-087
	900924-183MS	901015-087	solid	Matrix spike for 900924-
		901115-071 901120-177 901220-194	bl an k blank blank	BNA blank for 900924-183 PCB blank for 900924-183 PCB blank for 900924-182

Oak Ridge K-25 Site Analytical Chemistry Department Results of Analyses

Analis ID: 900924-182

Project: G132 034L

Customer Sample ID: E1911 Requisition Number:

Customer: J. KESSNER/D.STOCKER

Sampled-By:

Date Sampled: 9-AUG-1990

Date Sample Received: 21-SEP-1990

Date Sample Completed:

Material Description: LIQUID FROM ORPHAN DRUMS

[]: Result has been Corrected for Spike

stiv.	Procedure No.	Analysis	Result	Units	Analyst	QA File Number	Date Completed
	EPA-6010	Arsenic (TCLP)		mg/L			
	EPA-6010	Lead (TCLP)		mg/L			
	EPA-6010	Selenium (TCLP)		mg/L			
30708	EPA-6010	Barium (TCLP)	2.6	mg/L	ML BAIN	01226A	26-DEC-1990
	EPA-6010	Cadmium (TCLP)	<0.0030	mg/L	ML BAIN	01226A	26-DEC-1990
	EPA-6010	Chromium (TCLP)	<0.010	mg/L	ML BAIN	01226A	26-DEC-1990
	EPA-6010	Silver (TCLP)	<0.010	mg/L	ML BAIN	01226A	26-DEC-1990
03208	EPA-7470	Mercury (TCLP)	<0.0002	ug/L	SA BURGESS	01008E	8-0CT-1990
32508	EPA-3520	Prep (PCB- SW-846-Lig/lig)	c		MF MCMYLER	1840	20-DEC-1990
32608	EPA-3510	Prep (Pest- SW-846-Funnel)	c		MF MCMYLER	1840	20-DEC-1990
34007	EPA-3520	Prep (BNA- SW-846-Liq/liq)	N/A		MF MCMYLER	N/A	20-DEC-1990
71007	EPA-1311	TCLP Extraction	c		BD HARRIS	90-6	17-DEC-1990
82107	EPA-160.3	Total Solids	20560	#g/L	RM SALINAS	90-24	3OCT-1990
82507	EPA-9040	PH	5.5		RM SALINAS	90-18	28-SEP-1990
86807	EPA-1010	Flash Point Closed Cup	R >145	degrees F	J GOODMAN JR	90-34	29-0CT-1990

rep (BNA- SW-846-Liq/liq)

malyst

= MF MCMYLER

ate Extracted

= 19-DEC-1990

'rep (PCB- SW-846-Liq/liq)

= MF MCMYLER malyst

= 7

= 20-DEC-1990 Date Extracted

Sample Volume Extracted (mL) = 92

Extraction Method = Separatory Funnel = Methylene Chloride Extraction Solvent ⇒ Sodium Sulfate

Extraction Cleanup Final Volume of Extract (mL) = 10.0

= 901220-194 Associated Blank

^{*****} Comments from the Wet Chemistry Laboratory *****

re

***** Comments from the Organic Mass Spectroscopy Laboratory *****

ample not received in GC/MS lab...

Program Manager: D. L. Amburgey
Date Approved:

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Analis ID: 900924-182

Laboratory: Organic Mass Spectroscopy Laboratory

Customer Sample ID: E1911

Customer: J. KESSNER/D.STOCKER

File ID:

Sample Matrix: WASTE Requisition Number:

Instrument ID:

Authorized By: D. C. Canada

Date Sample Received: 24-SEP-1990

BNA Base/Neutral/Acid Organic Compounds (TCL)

Date Extracted/Prepared: 20-NOV-1990

Date Analyzed: 20-NOV-1990

Preparation Procedure Number: EPA-3520

Analysis Procedure Number: BNA (CLP) NDP

Percent Moisture:

Dilution Factor:

Percent Moisture (decanted):

Analyst: DC CANADA

Associated Blank:

QA File Number: NA

[]: Result has been Corrected for Spike

CAS		ug/L	CAS		ug/L
108-95-2	Phenol	NA	106-47-8	4-Chloroaniline	KA
111-44-4	bis(2-Chloroethyl)ether	NA	87-68-3	Hexachlorobutadiene	na
95-57-8	2-Chlorophenol	NA	59-50-7	4-Chloro-3-methylphenol	MA
541-73-1	1,3-Dichlorobenzene	NA	91-57-6	2-Methylnaphthalene	NA
106-46-7	1,4-Dichlorobenzene	NA	77-47-4	Hexachlorocyclopentadiene	NA
100-51-6	Benzyl Alcohol	NA	88-06-2	2,4,6-Trichlorophenol	MA
95-50-1	1,2-Dichlorobenzene	NA	95-95-4	2,4,5-Trichlorophenol	NA
95-48-7	2-Methylphenol	NA	91-58-7	2-Chloronaphthalene	MA
108-60-1	bis(2-Chloroisopropyl)ether	NA.	88-74-4	Z-Nitroaniline	Ka
106-44-5	4-Methylphenol	na	131-11-3	Dimethylphthalate	AN
621-64-7	N-Nitroso-di-n-propylamine	NA	208-96-8	Acenaphthylene	MA
67-72-1	Hexachloroethane	NA	99-09-2	3-Nitroaniline	MA
98-95-3	Nitrobenzene	NA.	83-32-9	Acenaphthene	MA
78-59-1	Isophorone	AM	51-28-5	2,4-Dinitrophenol	MA
88-75-5	2-Nitrophenol	NA	100-02-7	4-Nitrophenol	NA
105-67-9	2,4-Dimethylphenol	NA	132-64-9	Dibenzofuran	MA
65-85-0	Benzoic Acid	NA	121-14-2	2,4-Dinitrotoluene	NA
111-91-1	bis(2-Chloroethoxy)methane	AM	606-20-2	2,6-Dinitrotoluene	NA
120-83-2	2,4-Dichlorophenol	AM	84-66-2	Diethylphthalate	NA
120-82-1	1,2,4-Trichlorobenzene	NA	7005-72-3	4-Chlorophenyl-phenylether	na
91-20-3	Naphthalene	NA	86-73-7	Fluorene	AM

U - Compound was analyzed for but not detected. The number is the attainable detection limit for the sample.

B - Analyte was found in the reagent blank as well as the sample.

J - Indicates an estimated value.

ND - Not detected.

A - Aldol condensation product.

D - Secondary dilution.

E - Exceeds initial calibration range.

Analis ID: 900924-182 Customer Sample ID: E1911

Laboratory: Organic Mass Spectroscopy Laboratory Customer: J. KESSNER/D.STOCKER

File ID: Sample Matrix: WASTE

Instrument ID: Requisition Number:

Authorized By: D. C. Canada Date Sample Received: 24-SEF-1990

BNA Base/Neutral/Acid Organic Compounds (TCL)

Date Extracted/Prepared: 20-NOV-1990 Date Analyzed: 20-NOV-1990
Preparation Procedure Number: EPA-3520 Analysis Procedure Number: BNA (CLP) NDP

Percent Moisture: Dilution Factor: 1.0
Percent Moisture (decanted): Analyst: DC CANADA

Associated Blank: QA File Number: NA

[]: Result has been Corrected for Spike

CAS		ug/L	CAS		ug/L
100-01-6	4-Nitroaniline	NA	53-70-3	Dibenz(a,h)anthracene	NA NA
534-52-1	4,6-Dinitro-2-methylphenol	NA.	191-24-2	Benzo(g,h,i)perylene	NA
86-30-6	N-Nitrosodiphenylamine	NA			
101-55-3	4-Bromophenyl-phenylether	NA			
118-74-1	Hexachlorobenzene	NA			
87-86-5	Pentachlorophenol	NA			
85-01-8	Phenanthrene	NA			
120-12-7	Anthracene	NA			
84-74-2	Di-n-butylphthalate	NA			
206-44-0	Fluoranthene	NA			
129-00-0	Pyrene	NA			
85-68-7	Butylbenzylphthalate	NA.			
91-94-1	3,3'-Dichlorobenzidine	NA			
56-55-3	Benzo(a)anthracene	NA			
117-81-7	bis(2-Ethylhexyl)phthalate	NA			
218-01-9	Chrysene	NA			
117-84-0	Di-n-octylphthalate	NA			
205-99-2	Benzo(b)fluoranthene	NA			
207-08-9	Benzo(k)fluoranthene	NA			
50-32-8	Benzo(a)pyrene	NA			
193-39-5	Indeno(1,2,3-cd)pyrene	NA			

U - Compound was analyzed for but not detected. The number is the attainable detection limit for the mample.

B - Analyte was found in the reagent blank as well as the sample.

J - Indicates an estimated value.

ND - Not detected.

A - Aldol condensation product.

D - Secondary dilution.

E - Exceeds initial calibration range.

Analis ID: 900924-182

Laboratory: Organic Mass Spectroscopy Laboratory

Anguer Service Communication (Communication Communication Communication

Customer Sample ID: E1911

Customer: J. KESSNER/D.STOCKER

File ID: >07119

Sample Matrix: WASTE

Instrument ID: 70-2

Requisition Number:

Authorized By: D. C. Canada

Date Sample Received: 21-SEP-1990

VOA - Volatile Organic Compounds (TCL)

Date Extracted/Prepared: 8-OCT-1990

Date Analyzed: 8-OCT-1990

Preparation Procedure Number:

Analysis Procedure Number: VOA (CLP) NDP

Percent Moisture:

Dilution Factor:

Percent Moisture (decanted):

Analyst: GL HUDDLESTON

Associated Blank: 901008-116

OA File Number: NA

[]: Result has been Corrected for Spike

CAS		ug/L	CAS		ug/L
74-87-3	Chloromethane	500	79-00-5	1,1,2-Trichloroethane	250
74-83-9	Bromomethane	50 ʊ	71-43-2	Benzene	250
75-01-4	Vinyl Chloride	50 U	10061-02-6	trans-1,3-Dichloropropene	25ប
75-00-3	Chloroethane	50 U	75-25-2	Bromoform	250
75-09-2	Methylene Chloride	30 в	108-10-1	4-Methyl-2-pentanone	50ບ
67-64-1	Acetone	290	591-78-6	2-Hexanone	50 U
75-15-0	Carbon Disulfide	250	127-18-4	Tetrachloroethene	25บ
75-35-4	1,1-Dichlorosthene	250	79-34- 5	1,1,2,2-Tetrachloroethane	25 u
75-34-3	1,1-Dichloroethane	250	108-88-3	Toluene	55
540-59-0	1,2-Dichloroethene (total)	250	108-90-7	Chlorobenzene	250
67-66-3	Chloroform	250	100-41-4	Ethylbenzene	250
107-06-2	1,2-Dichloroethane	250	100-42-5	Styrene	25ບ
78-93-3	2-Butanone	50บ	1330-20-7	Xylene (total)	39 J
71-55-6	1,1,1-Trichloroethane	250			
56-23-5	Carbon Tetrachloride	250			
108-05-4	Vinyl Acetate	5 0 0			
75-27-4	Bromodichloromethane	25 U			
78 -87- 5	1,2-Dichloropropane	250			
10061-01-5	cis-1,3-Dichloropropene	250			i
79-01-6	Trichloroethene	250			
124-48-1	Dibromochloromethane	250			

U - Compound was analyzed for but not detected. The number is the attainable detection limit for the sample.

B - Analyte was found in the reagent blank as well as the sample.

J - Indicates an estimated value.

ND - Not detected.

A - Aldol condensation product.

D - Secondary dilution.

E - Exceeds initial calibration range.

Analis ID: 900924-182 Customer Sample ID: E1911

Laboratory: Gas / Liquid Chromatography Laboratory Customer: J. KESSNER/D.STOCKER

File ID: Sample Matrix: WASTE

Instrument ID: Requisition Number:

Authorized By: D. S. ZINGG Date Sample Received: 24-SEP-1990

. PCB (TCL)

Date Extracted/Prepared: 28-DEC-1990 Date Analyzed: 27-DEC-1990

Preparation Procedure Number: EPA-8080

Percent Moisture: Dilution Factor: 100.0

Percent Moisture (decanted): Analyst: RE HOWARD

Associated Blank: QA File Number: GC 0383

[]: Result has been Corrected for Spike

CAS		ug/L	CAS	ug/L
12674-11-2	Aroclor-1016	5000		
	Aroclor-1221	5000 5000		
	Aroclor-1232	5000		
53469-21-9	Aroclor-1242	500U		
12672-29-6	Aroclor-1248	500U		
11097-69-1	Aroclor-1254	1100U		
11096-82-5	Aroclor-1260	11000		

U - Compound was analyzed for but not detected. The number is the attainable detection limit for the sample.

B - Analyte was found in the reagent blank as well as the sample.

J - Indicates an estimated value.

ND - Not detected.

A - Aldol condensation product.

D - Secondary dilution.

E - Exceeds initial calibration range.

Analis ID: 900924-182

Customer Sample ID: E1911

Laboratory: Gas / Liquid Chromatography Laboratory

Customer: J. KESSNER/D.STOCKER

File ID: GC 0383

Sample Matrix: WASTE

Instrument ID:

Requisition Number:

Authorized By: D. S. ZINGG

Date Sample Received: 24-SEP-1990

PESTICIDES (EP-TOX)

Date Extracted/Prepared:

Date Analyzed: 27-DEC-1990

Preparation Procedure Number: EPA-3510

Analysis Procedure Number: EPA-8080

Percent Moisture:

Dilution Factor: 100

Percent Moisture (decanted):

Analyst: DS ZINGG

Associated Blank:

QA File Number: GC 0383

[]: Result has been Corrected for Spike

CAS		ug/L	CAS	ug/L
72-20-8	Endrin	1000		
58-89-9	gamma-BHC(Lindane)	50 U		
72-43-5	Methoxychlor	500 U		
8001-35-2	Toxaphene	10000		
5103-71-9	alpha-Chlordane	500 U		
5103-74-2	gamma-Chlordane	5000		
76-44-8	Heptachlor	50 V		
1024-57-3	Heptachlor Epoxide	50U		

U - Compound was analyzed for but not detected. The number is the attainable detection limit for the sample.

B - Analyte was found in the reagent blank as well as the sample.

J - Indicates an estimated value.

ND - Not detected.

A - Aldol condensation product.

D - Secondary dilution.

E - Exceeds initial calibration range.

Oak Ridge K-25 Site Analytical Chemistry Department Results of Analyses

Analis ID: 900924-183

Project: G132 034S

Customer Sample ID: E1912

Customer: J. KESSNER/D.STOCKER

Requisition Number:

Date Sampled: 9-AUG-1990 Sampled By:

Date Sample Received: 21-SEP-1990

Date Sample Completed:

Material Description: ORPHAN DRUM SAMPLES SOLIDS

[]: Result has been Corrected for Spike

otiv. "mber	Procedure No.	Analysis	Result	Units	Analyst	QA File Number	Date Completed
,	***********						
	EPA-6010	Arsenic (TCLP)	• • • • • •	mg/L			
	EPA-6010	Lead (TCLP)	******	mg/L			
	EPA-3510	PESTICIDES (EP-TOX) SOIL	4******	ug/L			
	EPA-3510	Prep (Pest- SW-846-Funnel)					
	EPA-6010	Selenium (TCLP)		mg/L			
			-0.40	44		04007.	
70207	EPA-6010	Barium (TCLP)	<0.10	mg/L	ML BAIN	01023A	23-OCT-1990
	EPA-6010	Cadmium (TCLP)	<0.0030	mg/L	ML BAIN	01023A	23-0CT-1990
	EPA-6010	Chromium (TCLP)	7.0	mg/L	ML BAIN	01023A	23-0CT-1990
	EPA-6010	Silver (TCLP)	<0.010	mg/L	ML BAIN	01023A	23-OCT-1990
)32 08	EPA-7470	Mercury (TCLP)	<0.002	ug/L	MC ROSS	01018A2	25-OCT-1990
31003	EPA-3540	Prep (PCB- SW-846-Sox)	С		JH KREIS	2243	24-NOV-1990
\$5003	EPA-3550	Prep (BNA- SW-846-Sox)	C		JH KREIS	2173	15-NOV-1990
73603	EPA-1311	TCLP Metals Extraction	С		JA ROUSE	xx	10-0CT-1990
32603	EPA-9045	рH	x		HR SULLIVAN	x	26-OCT-1990
36803	EPA-1010	Flash Point Closed Cup	x	degrees F	HN SULLIVAN	x	26-0CT-1990

rep (BNA- SW-846-Sox)

natyst = JH KREIS ate Extracted = 12-NOV-1990

ample Weight Extracted (g) = 10.27 ercent Solids = 94.5 alculated Dried Weight (g) = 9.71 xtraction Method = Soxhlet

xtraction Solvent □ ■ Methlylene Chloride/Acetone

xtraction Cleanup = Sodium Sulfate

inal Volume of Extract (mL) = 1

ssociated Blank = 901115-071

rep (PCB- SW-846-Sox)

nalyst = JH KREIS ate Extracted ≈ 20-NOV-1990

ample Weight Extracted (g) = 13.00 ercent Solids = 94.5 alculated Dried Weight (g) = 12.28 xtraction Method ≈ Soxhlet xtraction Solvent = Hexane

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4 :raction Cleanup

= Sulfuric Acid, Sodium Sulfate

hal Volume of Extract (mL) = 10

ociated Blank

;

= 901120-177

***** Comments from the Wet Chemistry Laboratory *****

Insufficient sample to complete the analysis for flash point and pH.

***** Comments from the Organic Mass Spectroscopy Laboratory *****

mple not received in GC/MS lab....

Program Hanager: D. L. Amburgey Date Approved:

Analis ID: 900924-183

Customer Sample ID: E1912

Customer: J. KESSNER/D.STOCKER Laboratory: Organic Mass Spectroscopy Laboratory Sample Matrix: SOIL

File ID: 14337 Requisition Number: Instrument ID: HP-5985

Date Sample Received: 24-SEP-1990 Authorized By: D. C. Canada

BNA - Base/Neutral/Acid Compounds (TCL)

Date Extracted/Prepared: 20-NOV-1990 Date Analyzed: 27-NOV-1990 Preparation Procedure Number: EPA-3520 Analysis Procedure Number: BNA (CLP) NDP

Percent Moisture: Dilution Factor: 1.0

Analyst: AK HEADRICK Percent Moisture (decanted):

> Associated Blank: 901115-071 QA File Number: NA

[] : Result has been Corrected for Spike

		ug/Kg	CAS			ug/Kg
	-					
Phenol	R	1000.UU	106-47-8	4-Chloroaniline	R	1000.00
bis(2-Chloroethyl)ether	R	1000.00	87-68-3	Hexach Lorobutadiene	R	1000.00
2-Chlorophenol	R	1000.00	59-50-7	4-Chloro-3-methylphenol	R	1000.00
1,3-Dichlorobenzene	R	1000.00	91-57-6	2-Methylnaphthalene	R	1000.UU
1,4-Dichlorobenzene	R	1000.00	77-47-4	Hexachlorocyclopentadiene	R	1000.00
Benzyl Alcohol	R	1000.00	88-06-2	2,4,6-Trichlarophenol	R	1000.UU
1,2-Dichlorobenzene	R	1000.00	95-95-4	2,4,5-Trichlorophenol	R	5100.UU
2-Methylphenol	R	1000.00	91-58-7	2-Chloronaphthalene	R	1000.UU
bis(2-Chloroisopropyl)ether	R	1000.00	88-74-4	2-Nitroaniline	R	5100.UU
4-Hethylphenol	R	1000.00	131-11-3	Dimethylphthalate	R	1000.00
N-Nitroso-di-n-propylamine	R	1000.00	208-96-8	Acenaphthylene	R	1000,00
Hexachloroethane	R	1000.UU	99-09-2	3-Nitrosniline	R	5100 . UU
Ni trobenzene	R	1000.UU	83-32-9	Acenaphthene	R	1000.00
Isophorone	R	1000.00	51-28-5	2,4-Dinitrophenol	R	5100.00
2-Nitrophenol	R	1000.00	100-02-7	4-Nitrophenol	R	5100.00
2,4-Dimethylphenol	R	1000.00	132-64-9	Dibenzofuran	R	1000.00
Benzoic Acid	R	5100.UU	121-14-2	2,4-Dinitrotoluene	R	1000.00
bis(2-Chloroethoxy)methane	R	1000.00	606-20-2	2,6-Dinitrotoluene	R	1000.00
2,4-Dichlorophenol	R	1000.UU	84-66-2	Diethylphthalate	R	1000.00
1,2,4-Trichlorobenzene	R	1000.UU	7005-72-3	4-Chlorophenyl-phenylether	R	1000.UU
Naphthalene	R	1000.00	86-73-7	Fluorene	R	1000.UU
	2-Chlorophenol 1,3-Dichlorobenzene 1,4-Dichlorobenzene Benzyl Alcohol 1,2-Dichlorobenzene 2-Methylphenol bis(2-Chloroisopropyl)ether 4-Hethylphenol N-Nitroso-di-n-propylamine Hexachloroethane Nitrobenzene Isophorone 2-Nitrophenol 2,4-Dimethylphenol Benzoic Acid bis(2-Chloroethoxy)methane 2,4-Dichlorophenol 1,2,4-Trichlorobenzene	bis(2-Chloroethyl)ether 2-Chlorophenol R 1,3-Dichlorobenzene R 1,4-Dichlorobenzene R Benzyl Alcohol R 1,2-Dichlorobenzene R 2-Methylphenol R bis(2-Chloroisopropyl)ether R 4-Methylphenol R M-Nitroso-di-n-propylamine R Hexachloroethane R Nitrobenzene R 1sophorone R 2,4-Dimethylphenol R Benzoic Acid R bis(2-Chloroethoxy)methane R 2,4-Dichlorophenol R 2,4-Dichlorophenol R	Phenol R 1000.UU bis(2-Chloroethyl)ether R 1000.UU 2-Chlorophenol R 1000.UU 1,3-Dichlorobenzene R 1000.UU 1,4-Dichlorobenzene R 1000.UU 1,2-Dichlorobenzene R 1000.UU 1,2-Dichlorobenzene R 1000.UU 2-Methylphenol R 1000.UU 4-Methylphenol R 1000.UU 4-Methylphenol R 1000.UU H-Nitroso-di-n-propylamine R 1000.UU Hexachloroethane R 1000.UU Nitrobenzene R 1000.UU 2-Nitrophenol R 1000.UU 2,4-Dimethylphenol R 1000.UU 2,4-Dimethylphenol R 1000.UU 2,4-Dichlorophenol R 1000.UU 2,4-Dichlorophenol R 1000.UU 2,4-Trichlorobenzene R 1000.UU	Phenol R 1000.UU 37-68-3 2-Chlorophenol R 1000.UU 59-50-7 1,3-Dichlorobenzene R 1000.UU 91-57-6 1,4-Dichlorobenzene R 1000.UU 77-47-4 Benzyl Alcohol R 1000.UU 95-95-4 2-Methylphenol R 1000.UU 91-58-7 bis(2-Chloroisopropyl)ether R 1000.UU 91-58-7 bis(2-Chloroisopropyl)ether R 1000.UU 91-58-7 bis(2-Chloroisopropyl)ether R 1000.UU 331-11-3 N-Nitroso-di-n-propylamine R 1000.UU 208-96-8 Hexachloroethane R 1000.UU 99-09-2 Nitrobenzene R 1000.UU 99-09-2 Nitrobenzene R 1000.UU 33-32-9 Isophorone R 1000.UU 100-02-7 2,4-Dimethylphenol R 1000.UU 132-64-9 Benzoic Acid R 5100.UU 121-14-2 bis(2-Chloroethoxy)methane R 1000.UU 84-66-2 2,4-Dichlorophenol R 1000.UU 84-66-2 1,2,4-Trichlorobenzene R 1000.UU 84-66-2	Phenol R 1000.UU 87-68-3 Hexachlorobutadiene 2-Chlorophenol R 1000.UU 59-50-7 4-Chloro-3-methylphenol 1,3-Dichlorobenzene R 1000.UU 91-57-6 2-Methylnaphthalene 1,4-Dichlorobenzene R 1000.UU 77-47-4 Hexachlorocyclopentadiene Benzyl Alcohol R 1000.UU 95-95-4 2,4,5-Trichlorophenol 1,2-Dichlorobenzene R 1000.UU 95-95-4 2,4,5-Trichlorophenol 2-Methylphenol R 1000.UU 97-58-7 2-Chloronaphthalene bis(2-Chloroisopropyl)ether R 1000.UU 91-58-7 2-Chloronaphthalene bis(2-Chloroisopropyl)ether R 1000.UU 131-11-3 Dimethylphthalate N-Nitroso-di-n-propylamine R 1000.UU 208-96-8 Acenaphthylene Hexachloroethane R 1000.UU 99-09-2 3-Nitroaniline Nitrobenzene R 1000.UU 83-32-9 Acenaphthene Isophorone R 1000.UU 83-32-9 Acenaphthene Isophorone R 1000.UU 100-02-7 4-Nitrophenol 2,4-Dimethylphenol R 1000.UU 132-64-9 Dibenzofuran Benzoic Acid R 5100.UU 121-14-2 2,4-Dinitrotoluene bis(2-Chloroethoxy)methane R 1000.UU 84-66-2 Diethylphthalate 1,2,4-Trichlorobenzene R 1000.UU 7005-72-3 4-Chlorophenyl-phenylether	Phenol R 1000.UU 106-47-8 4-Chloroaniline R bis(2-Chloroethyl)ether R 1000.UU 87-68-3 Hexachlorobutadiene R 2-Chlorophenol R 1000.UU 59-50-7 4-Chloro-3-methylphenol R 1,3-Dichlorobenzene R 1000.UU 91-57-6 2-Methylnaphthalene R 1,4-Dichlorobenzene R 1000.UU 77-47-4 Hexachlorocyclopentadiene R Benzyl Alcohol R 1000.UU 88-06-2 2,4,6-Trichlorophenol R 1,2-Dichlorobenzene R 1000.UU 95-95-4 2,4,5-Trichlorophenol R 2-Methylphenol R 1000.UU 91-58-7 2-Chloronaphthalene R bis(2-Chloroisopropyl)ether R 1000.UU 88-74-4 2-Nitroaniline R 4-Methylphenol R 1000.UU 131-11-3 Dimethylphthalate R N-Nitroso-di-n-propylamine R 1000.UU 99-09-2 3-Nitroaniline R Nitrobenzene R 1000.UU 99-09-2 3-Nitroaniline R Nitrobenzene R 1000.UU 99-09-2 4-Nitrophenol R 1sophorone R 1000.UU 83-32-9 Acenaphthene R 1sophorone R 1000.UU 100-02-7 4-Nitrophenol R 2-Nitrophenol R 1000.UU 132-64-9 Dibenzofuran R Benzoic Acid R 5100.UU 121-14-2 2,4-Dinitrotoluene R bis(2-Chloroethoxy)methane R 1000.UU 84-66-2 Diethylphthalate R 1,2,4-Trichlorobenzene R 1000.UU 84-66-2 Diethylphthalate R

U - Compound was analyzed for but not detected. The number is the attainable detection limit for the sample.

B - Analyte was found in the reagent blank as well as the sample.

J - Indicates an estimated value.

ND - Not detected.

A - Aldol condensation product.

D - Secondary dilution.

E - Exceeds initial calibration range.

AnaLIS ID: 900924-183

Customer Sample ID: E1912

Laboratory: Organic Mass Spectroscopy Laboratory

Customer: J. KESSNER/D.STOCKER

File ID: 14337

Sample Matrix: SOIL
Requisition Number:

Instrument ID: HP-5985
Authorized By: D. C. Canada

Date Sample Received: 24-SEP-1990

BNA - Base/Neutral/Acid Compounds (TCL)

Date Extracted/Prepared: 20-NOV-1990

Date Analyzed: 27-NOV-1990

Preparation Procedure Number: EPA-3520

Analysis Procedure Number: BNA (CLP) NDP

Percent Moisture: 5

Dilution Factor: 1.0

Percent Hoisture (decanted):

Analyst: AK HEADRICK

Associated Blank: 901115-071

QA File Number: NA

[]: Result has been Corrected for Spike

CAS			ug/Kg	CAS			ug/Kg
	A APP TITE		5100.00	EZ70Z	Dibenz(a,h)anthracene	 R	1000.00
100-01-6	4-Nitroaniline	R		53-70-3	• •		
534-52-1	4,6-Dinitro-2-methylphenol	R	5100.UU	191-24-2	Benzo(g,h,i)perylene	R	1000.UU
86-30-6	N-Nitrosodiphenylamine	R	1000.UU				
101-55-3	4-Bromophenyl-phenylether	R	1000.00				
118-74-1	Hexachlorobenzene	R	1000.00				
87-86-5	Pentachlorophenol	R	5100.00				
85-01-8	Phenanthrene	R	100 0.U U				
120-12-7	Anthracene	R	1000.00				
84-74-2	Di-n-butylphthalate	R	1500B				
206-44-0	Fluoranthene	R	1000.00				
129-00-0	Pyrene	R	1000.00				
85-68-7	Butylbenzylphthalate	R	1000.00				
91-94-1	3,3'-Dichlorobenzidine	R	2000.00				
56-55-3	Benzo(a)anthrac ene	R	1000.00				
117-81-7	bis(2-Ethylhexyl)phthalate	R	1000J				
218-01-9	Chrysene	R	1000.00				
117-84-0	Di-n-octylphthalate	R	1000.00				
205-99-2	Benzo(b)fluoranthene	R	1000.ນັບ				
207-08-9	Benzo(k)fluoranthene	R	1000.00				
50-32-8	Benzo(a)pyrene	R	1000.00				
193-39-5	Indeno(1,2,3-cd)pyrene	R	1000.UU				

- U Compound was analyzed for but not detected. The number is the attainable detection limit for the sample.
- B Analyte was found in the reagent blank as well as the sample.
- J Indicates an estimated value.
- ND Not detected.
- A Aldol condensation product.
- D Secondary dilution.
- E Exceeds initial calibration range.

Analis ID: 900924-183

Customer Sample ID: E1912

Laboratory: Organic Mass Spectroscopy Laboratory

Customer: J. KESSNER/D.STOCKER

File ID: >07084

Sample Matrix: SOIL Requisition Number:

Instrument ID: 70-2
Authorized By: D. C. Canada

Date Sample Received: 21-SEP-1990

VOA - Volatile Organic Compounds (TCL)

Date Extracted/Prepared: 4-0CT-1990

Date Analyzed: 4-OCT-1990

Preparation Procedure Number:

Analysis Procedure Number: VCA (CLP) NDP

Percent Moisture:

Dilution Factor: 1.0

Percent Moisture (decanted):

Analyst: GL HUDDLESTON

Associated Blank: 901004-038

QA File Number: NA

[]: Result has been Corrected for Spike

CAS		ug/Kg	CAS		ug/Kg

74-87-3	Chloromethane	110	79-00-5	1,1,2-Trichloroethane	5 U
74-83-9	Bromomethane	110	71-43-2	Benzene	5 U
75-01-4	Vinyl Chloride	110	10061-02-6	trans-1,3-Dichloropropene	5 U
75-00-3	Chloroethane	110	75-25-2	Bromoform	5 U
75-09-2	Methylene Chloride	4 JB	108-10-1	4-Methyl-2-pentanone	118
67-64-1	Acetone	97 B	591-78-6	2-Hexanone	78
75-15-0	Carbon Disulfide	5U	127-18-4	Tetrachioroethene	5 U
75-35-4	1,1-Dichloroethene	5U	79-34-5	1,1,2,2-Tetrachloroethane	5 U
75-34-3	1,1-Dichloroethane	5ນ	108-88-3	Toluene	5 U
540-59-0	1,2-Dichloroethene (total)	5 U	108-90-7	Chlorobenzene	50
67-66-3	Chloroform	50	100-41-4	Ethylbenzene	50
107-06-2	1,2-Dichloroethane	50	100-42-5	Styrene	50
78-93-3	2-Butanone	110	1330-20-7	Xylene (total)	5บ
71-55-6	1,1,1-Trichloroethane	5 U			
56-23-5	Carbon Tetrachioride	5 U			
108-05-4	Vinyl Acetate	118			
75-27-4	Bromodichloromethane	5 U			
78-87-5	1,2-Dichloropropane	50			
10061-01-5	cis-1,3-Dichloropropene	5 U			
79-01-6	Trichloroethene	50			
124-48-1	Dibromochloromethane	50			

U - Compound was analyzed for but not detected. The number is the attainable detection limit for the sample.

B - Analyte was found in the reagent blank as well as the sample.

J - Indicates an estimated value.

ND - Not detected.

A - Aldol condensation product.

D - Secondary dilution.

E - Exceeds initial calibration range.

Analis ID: 900924-183

Customer Sample ID: E1912

Laboratory: Gas / Liquid Chromatography Laboratory

Customer: J. KESSNER/D.STOCKER

File ID:

Sample Matrix: SOIL

Instrument ID:

Requisition Number:

Authorized By: D. S. ZINGG

Date Sample Received: 24-SEP-1990

PCB (TCL) SOIL

Date Extracted/Prepared: 30-NOV-1990

Date Analyzed: 29-NOV-1990

Preparation Procedure Number:

Analysis Procedure Number: EPA-8080

1.0

15.5 Percent Moisture: Percent Moisture (decanted):

Dilution Factor:

Analyst: EK BROWN

Associated Blank:

QA File Number: GC 338

[]: Result has been Corrected for Spike

0

CAS		ug/Kg	CAS	ug/Kg

12674-11-2	Aroclor-1016	110U		
11104-28-2	Aroctor-1221	110U		
11141-16-5	Aroctor-1232	1100		
53469-21-9	Aroctor-1242	1100		
12672-29-6	Aroctor-1248	1100		
11097-69-1	Aroctor-1254	220U		
11096-82-5	Aroctor-1260	2200		

- U Compound was analyzed for but not detected. The number is the attainable detection limit for the sample.
- B Analyte was found in the reagent blank as well as the sample.
- J Indicates an estimated value.
- ND Not detected.
- A Aldol condensation product.
- D Secondary dilution.
- E Exceeds initial calibration range.

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MARTIN MARIETTA ENE	MISTRY DEPARTI	MENT	·		OF CUSTODY RECORD						ACD.	STA# 0016-90 ACD/COC NO: 01408		
	PROJECT NAME Orph Contact: D. S	ian Dru		ysis	NO. OF CON-	i	- 808°	24-1010	9,00	metals D	-8240 Cat	REMAR		
CUSTOMER NUMBER	ACD NUMBER	SAM	IPLING TIME	SAMPLE TYPE	TAINERS	PCB'	7	Hd	ı / (•/ •			
E19//		8-9	10:00 AM	Liquid	1	Х	χ	χ	X	λ	X	6132-0346		
E1912		8-9	LOLODAM			X_	X_	X	χ	X	Х	6131-0345		
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RELINGUISHED BY (Signal	8/319	4214 []	ON Signatu	(عاه	9-11-90 Date			RELI	NQUI	SHED	ВҮ	(Signature) Date	Time	RECEIVED BY (Signature

6 Number: 2332, R-0 Analysis: Sample Receipt Ample: DOE Site Survey ..ethod: Written Description Page 3 of 3 TITLE: Receipt and Tracking of DOE Site Survey Samples COOLER RECEIPT FORM Date: 9-21-90 Shipper ID and Document No: FE 8556452936

Cooler ID if noted on outside of cooler: NONE Cooler ID if noted on outside of cooler: NONE Project/Site: HANFORD (Yes) Custody Seal on Cooler? No Custody seals dated and signed? (Yes Condition of cooler Prog. Mgr. notified of acceptable? receipt of cooler? Radicactive Labels? Radioactivity recheck OK? Hazardous Labels? No Samples properly Labeled Custody form(s) inside Custody form(s) properly cocier? completed and signed? Was cooler required to Thermometer inside of be maintained at 4°C ? cooler? Temperature of cooler: _____C° (X.X) Sample containers intact? (Yes) No Are Containers those VOA containers free of specified for requested bubbles? parameters? (Yes) No Additional infromation Date of login: SEPT 24, 90 needed from Prog. Mar.? Lab assigned ID No: 900924-182) NOTE: Nitrite-N, Nitrate-N, o-Phosphateo-Phosphate-P have 48 hour holding time. LOGIN THESE FIRST - ASAP The lab numbers plus the project number are used for tracking purposes.

Signed:

List Comments:

/IIRBORINE EXPRESS₀ SHIPMENT NO. 4071923 940 SHIPMENT NO. CR. Kirkpatrick deop point A20 US DOE/MARTIN MARIETTA ORIGIN 004071923 940 PSC 4071923-940 ENERGY SYSTEMS/OAK RIDGE SERVICES WEIGHT(LBS) 004071923 940 5 16 GASEOUS DIFUSSION PLANT/ ZIP CODE 256 (5/88) BLAIR RD HIGHWAY 58 37831 OAK RIDGE TN SECHIENCENO 0001 TYS M7420 W90-0-0436 CAR

> Patrice 1. Efund 9/14/90

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FLAHMABLE LIQUID, HOS	FLAHNABLE LIQUID	UN-1993 LIMITED QUANTITY	3.3 liters TOTAL	
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MARTIN MARIETTA ENERGY SYSTEMS, INC.

POST OFFICE BOX 2003 OAK RIDGE, TENNESSEE 37831-7440

April 22, 1991

Ms. Joan Kessner Westinghouse Hanford Company 2344 Stevens Drive Richland, Washington 99352

Dear Ms. Kessner:

Analytical Results Supplemental Package on Project 90-034: Underground Storage Tanks Sample Analysis

Attached are the updated results on two (2) Underground Storage Tank Sample Analysis samples, Project 90-034, received into the Analytical Chemistry Department (ACD) laboratories on September 21, 1990. These results are a supplement to the previously submitted data package for Project 90-034. Copies of the Chain of Custody records were included in the original package and have, therefore, not been included in this supplement.

The results are reported on ACD's AnaLis report format per letter dated December 20, 1990. The results on these samples are unchanged from the previously submitted results except for the inclusion of the arsenic, lead, and selenium results. All data quality objectives were satisfied on this project.

The semi-volatile analysis on sample E1911 and the pesticide analysis on sample E1912 remain incomplete at this time. Resolution of these analyses is pending.

I certify that this data package is in compliance with the terms and conditions of the OSM's revised Statement of Work and letter dated December 20, 1990, both technically and for completeness, for other than the conditions stated above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signatures.

Sincerely,

Lleborah Lamburgey Deborah L. Amburgey

Program Manager

Hanford Support Program

Chrence R. Kirlpituil Clarence R. Kirkpatrick

Program Manager

Waste Management Analysis

Department Manager

Analytical Chemistry Department (K-25)

dla

Attachments

cc/attach: D.L.Amburgey

S.R.Smith - RC

cc: N.P.Buddin H.H.Sullivan

SAMPLE IDENTIFICATION FOR

SUPPLEMENTAL DATA PACKAGE

PROJECT 90-034

Table 1.1 - Sample Identification Table for Supplemental Data Package for Project 90-034: Underground Storage Tank Sample Analysis

Date	OSM Sample	Lab Sample	Matrix	Comments
Group Rec.	ID	ID		
9/21/90	E1911	900924-182	liquid	
	E1912	900924-183	solid	

Oak Ridge K-25 Site Analytical Chemistry Department Results of Analyses

Date Printed: 3-APR-1991 13:32

AnaLIS ID: 900924-182 Customer: J. KESSNER/D.STOCKER Date Sampled:

9-AUG-1990

Project: G132 034L

Customer Sample ID: E1911

Requisition Number:

Date Sample Received: 21-SEP-1990

Sampled By: Date Sample Completed: 26-MAR-1991 Material Description: LIQUID FROM ORPHAN DRUMS [] : Result has been Corrected for Spike

7.						QA	Date
3₽	Procedure No.	Analysis	Result	Units	Analyst	File Number	Completed

)8	EPA-6010	Arsenic (TCLP)	<0.050	mg/L	ML BAIN	01226A	26-DEC-1990
	EPA-6010	Barium (TCLP)	2.6	mg/L	ML BAIN	01226A	26-DEC-1990
	EPA-6010	Cadmium (TCLP)	<0.0030	mg/L	ML BAIN	01226A	26-DEC-1990
	EPA-6010	Chromium (TCLP)	<0.010	mg/L	ML BAIN	01226A	26-DEC-1990
	EPA-6010	Lead (TCLP)	<0.050	mg/L	ML BAIN	01226A	26-DEC-1990
	EPA-6010	Selenium (TCLP)	<0.050	mg/L	ML BAIN	01226A	26-DEC-1990
	EPA-6010	Silver (TCLP)	<0.010	mg/L	ML BAIN	01226A	26-DEC-1990
)8	EPA-7470	Mercury (TCLP)	<0.0002	ug/L	SA BURGES	s 01008E	8-0CT-1990
)8	EPA-3520	Prep (PCB- SW-846-Liq/liq)	С		MF MCMYLE	R 1840	20-DEC-1990
18	EPA-3510	Prep (Pest- SW-846-Funnel)	С		MF MCMYLE	R 1840	20-DEC-1990
)7	EPA-3520	Prep (BNA- SW-846-Liq/liq)	R/A		MF MCMYLE	R N/A	20-DEC-1990
)?	EPA-1311	TCLP Extraction	С		BD HARRIS	90-8	17-DEC-1990
17	EPA-160.3	Total Solids	20560	mg/L	RM SALINA	s 90-24	3-0CT-1990
37	EPA-9040	рн	5.5		RM SALINA	s 90-18	28-SEP-1990
J 7	EPA-1010	Flash Point Closed Cup	R >145	degrees	F J GOODMA	N JR 90-34	29-0CT-1990

(BNA- SW-846-Lig/Lig)

/st = MF MCMYLER = 19-DEC-1990 Extracted

(PCB- SW-846-Lig/lig)

∕st **■ MF MCMYLER**

= 7

= 20-DEC-1990 Extracted

e Volume Extracted (mL) = 92

action Method = Separatory Funnel action Solvent = Methylene Chloride

action Cleanup = Sodium Sulfate

Volume of Extract (mL) = 10.0

:iated Blank = 901220-194

***** Comments from the Wet Chemistry Laboratory *****

nsufficient sample to complete the analysis for flash point.

***** Comments from the Organic Mass Spectroscopy Laboratory *****

e not received in GC/MS lab...

Program Manager: D. L. Amburgey Date Approved: 26-MAR-1991 1 of 2 ANALYSIS DATA REPORT Date Printed: 3-APR-1991 13:32

AnaLIS ID: 900924-182

Customer Sample ID: E1911

Custômer: J. KESSNER/D.STOCKER

Laboratory: Organic Mass Spectroscopy Laboratory File ID:

Sample Matrix: WASTE

Requisition Number:

Instrument ID: Authorized By: D. C. Canada

Date Sample Received: 24-SEP-1990

BNA Base/Neutral/Acid Organic Compounds (TCL)

Date Extracted/Prepared: 20-NOV-1990

Date Analyzed: 20-NOV-1990

Preparation Procedure Number: EPA-3520

Analysis Procedure Number: BNA (CLP) NDP

1.0

Percent Moisture:

Dilution Factor:

Analyst: DC CANADA

Percent Moisture (decanted): Associated Blank:

QA File Number: NA

[] : Result has been Corrected for Spike

CAS		ug/L	CAS		ug/L
108-95-2	Phenol	NA	106-47-8	4-Chloroaniline	NA.
111-44-4	bis(2-Chloroethyl)ether	NA	87-68-3	Hexachlorobutadiene	NA
95-57-8	2-Chlorophenol	NA	59-50-7	4-Chloro-3-methyiphenol	NA
541-73-1	1,3-Dichtorobenzene	NA	91-57-6	2-Methylnaphthalene	NA
106-46-7	1,4-Dichlorobenzene	NA	77-47-4	Hexachlorocyclopentadiene	NA
100-51-6	Benzyl Alcohol	NA	88-06-2		NA
95-50-1	1,2-Dichlorobenzene	NA	95-95-4	2,4,5-Trichlorophenol	NA
95-48-7	2-Methylphenol	NA	91-58-7	2-Chioronaphthalene	NA
108-60-1	bis(2-Chloroisopropyl)ether	NA	88-74-4	2-Nitroaniline	NA
106-44-5	4-Methylphenol	NA	131-11-3	Dimethylphthalate	NA
621-64-7	N-Nitroso-di-n-propylamine	NA	208-96-8	Acenaphthylene	NA
67-72-1	Hexachloroethane	NA	99-09-2	3-Nitroaniline	NA
98-95-3	Nitrobenzene	NA	83-32-9	Acenaphthene	NA
78-59-1	Isophorone	NA	51-28-5	2,4-Dinitrophenol	NA
88-75-5	2-Nitrophenol	NA	100-02-7	4-Nitrophenol	NA
105-67-9	2,4-Dimethylphenol	NA	132-64-9	Dibenzofuran	NA
65-85-0	Benzoic Acid	NA	121-14-2	2,4-Dinitrotoluene	NA
111-91-1	bis(2-Chloroethoxy)methane	NA	606-20-2	2,6-Dinitrotoluene	NA
120-83-2	2,4-Dichlorophenol	NA	84-66-2	Diethylphthalate	NA
120-82-1	1,2,4-Trichtorobenzene	NA	7005-72-3	4-Chlorophenyl-phenylether	NA
91-20-3	Naphthalene	NA	86-73-7	Fluorene	NA

- U Compound was analyzed for but not detected. The number is the attainable detection limit for the sample.
- B Analyte was found in the reagent blank as well as the sample.
- J Indicates an estimated value.
- ND Not detected.
- A Aldol condensation product.
- D Secondary dilution.
- E Exceeds initial calibration range.

ANALYSIS DATA REPORT

Date Printed: 3-APR-1991 13:32

Analis ID: 900924-182 Customer Sample ID: E1911

Laboratory: Organic Mass Spectroscopy Laboratory Customer: J. KESSNER/D.STOCKER

File ID: Sample Matrix: WASTE

Instrument ID: Requisition Number:

Authorized By: D. C. Canada Date Sample Received: 24-SEP-1990

BNA Base/Neutral/Acid Organic Compounds (TCL)

Date Extracted/Prepared: 20-NOV-1990 Date Analyzed: 20-NOV-1990
Preparation Procedure Number: EPA-3520 Analysis Procedure Number: BNA (CLP) NDP

Percent Moisture: Dilution Factor: 1.0

Percent Moisture (decanted):

Associated Blank:

Associated Blank:

Associated Blank:

Analyst: DC CANADA

QA File Number: NA

[] : Result has been Corrected for Spike

CAS		ug/L	CAS		ug/L
100-01-6	4-Nitroaniline	NA	5 3-7 0-3	Dibenz(a,h)anthracene	NA
534-52-1	4,6-Dinitro-2-methylphenol	NA	191-24-2	Benzo(g,h,i)perylene	NA
86-30-6	N-Nitrosodiphenylamine	NA			
101-55-3	4-Bromophenyl-phenylether	NA			
118-74-1	Hexachlorobenzene	NA			
87-86-5	Pentachlorophenol	NA			
85-01-8	Phenanthrene	NA			
120-12-7	Anthracene	NA			
84-74-2	Di-n-butylphthalate	NA			
206-44-0	Fluoranthene	NA			
129-00-0	Pyrene	NA			
85-68-7	Butylbenzylphthalate	NA			
	3,31-Dichlorobenzidine	NA			
56-55-3	Benzo(a)anthracene	NA			
117-81-7	bis(2-Ethylhexyl)phthalate	NA			
218-01-9	Chrysene	NA			
117-84-0	Di-n-octylphthalate	NA			
205-99-2	Benzo(b)fluoranthene	NA			
207-08-9	Benzo(k)fluoranthene	NA			
50-32-8	Benzo(a)pyrene	NA			
193-39-5	Indeno(1,2,3-cd)pyrene	NA			

- U Compound was analyzed for but not detected. The number is the attainable detection limit for the sample.
- B Analyte was found in the reagent blank as well as the sample.
- J Indicates an estimated value.
- ND Not detected.
- A Aldol condensation product.
- D Secondary dilution.
- E Exceeds initial calibration range.

ANALYSIS DATA REPORT

Date Printed: 3-APR-1991 13:32

Analis ID: 900924-182 Customer Sample ID: E1911

Laboratory: Organic Mass Spectroscopy Laboratory Customer: J. KESSNER/D.STOCKER

File ID: >07119 Sample Matrix: WASTE

Instrument ID: 70-2 Requisition Number:

Authorized By: D. C. Canada Date Sample Received: 21-SEP-1990

VOA - Volatile Organic Compounds (TCL)

8-0CT-1990 Date Extracted/Prepared:

Date Analyzed: 8-007-1990 Analysis Procedure Number: VOA (CLP) NDP Preparation Procedure Number:

Percent Moisture: Dilution Factor: 5

Percent Moisture (decanted): Analyst: GL HUDDLESTON

Associated Blank: 901008-116 QA File Number: NA

[]: Result has been Corrected for Spike

CAS		ug/L	CAS		ug/L
74-87-3	Chloromethane	500	79-00-5	1,1,2-Trichloroethane	25U
74-83-9	Bromomethane	50U	71-43-2	Benzene	25U
	Vinyl Chloride	50U	10061-02-6	trans-1,3-Dichloropropene	25U
75-00-3	Chloroethane	50U	75-25-2	Bromoform	25U
	Methylene Chloride	30 B	108-10-1	4-Methyl-2-pentanone	50U
67-64-1	Acetone	290	591-78-6	2-Hexanone	50U
75-15-0	Carbon Disulfide	25U	127-18-4	Tetrachloroethene	
		25U	79-34-5		250
	1,1-Dichloroethene			1,1,2,2-Tetrachloroethane	250
75-34-3	1,1-Dichloroethane	250	108-88-3	Toluene	55
540-59-0	1,2-Dichloroethene (total)	250	108-90-7		25 U
67-66-3	Chloroform	25 U	100-41-4	Ethylbenzene	25U
107-06-2	1,2-Dichloroethane	25U	100-42-5	Styrene	25 U
78-93-3	2-Butanone	50ນ	1330-20-7	Xylene (total)	39 J
71-55-6	1,1,1-Trichloroethane	250			
56-2 3- 5	Carbon Tetrachloride	25U			
108-05-4	Vinyl Acetate	50U			
75-27-4	Bromodichloromethane	250			
78-87-5	1,2-Dichioropropane	25ti			
10061-01-5	cis-1,3-Dichloropropene	250			
79-01-6	Trichloroethene	250			
124-48-1	Dibromochloromethane	25U			
, 40 .	o tar omount of omotifully	230			

- U Compound was analyzed for but not detected. The number is the attainable detection limit for the sample.
- B Analyte was found in the reagent blank as well as the sample.
- J Indicates an estimated value.
- ND Not detected.
- A Aldol condensation product.
- D Secondary dilution.
- E Exceeds initial calibration range.

ANALYSIS DATA REPORT

Date Printed: 3-APR-1991 13:32

AnaLIS ID: 900924-182 Customer Sample ID: E1911

Laboratory: Gas / Liquid Chromatography Laboratory Customer: J. KESSNER/D.STOCKER

File ID: Sample Matrix: WASTE

Instrument ID: Requisition Number:

Authorized By: D. S. ZINGG Date Sample Received: 24-SEP-1990

PCB (TCL)

Date Extracted/Prepared: 28-DEC-1990 Date Analyzed: 27-DEC-1990

Preparation Procedure Number: EPA-8080

Percent Moisture: Dilution Factor: 100.0
Percent Moisture (decanted): Analyst: RE HOWARD

Associated Blank: QA File Number: GC 0383

[] : Result has been Corrected for Spike

CAS		ug/L	CAS	ug/L
12674-11-2	Aroctor-1016	500U		
11104-28-2	Aroctor-1221	500U		
11141-16-5	Arocior-1232	500U		
53469-21-9	Aroctor-1242	500U		
12672-29-6	Aroctor-1248	500U		
11097-69-1	Aroctor-1254	1100U		
11096-82-5	Aroctor-1260	1100U		

Data Reporting Qualifiers:

U - Compound was analyzed for but not detected. The number is the attainable detection limit for the sample.

B - Analyte was found in the reagent blank as well as the sample.

J - Indicates an estimated value.

ND - Not detected.

A - Aldol condensation product.

D - Secondary dilution.

E - Exceeds initial calibration range.

ANALYSIS DATA REPORT

Date Printed: 3-APR-1991 13:32

Analis ID: 900924-182 Customer Sample ID: E1911

Laboratory: Gas / Liquid Chromatography Laboratory Customer: J. KESSNER/D.STOCKER

File ID: GC 0383 Sample Matrix: WASTE

Instrument ID: Requisition Number:

Authorized By: D. S. ZINGG Date Sample Received: 24-SEP-1990

PESTICIDES (EP-TOX)

Date Extracted/Prepared: Date Analyzed: 27-DEC-1990
Preparation Procedure Number: EPA-3510 Analysis Procedure Number: EPA-8080
Percent Moisture: Dilution Factor: 100

Percent Moisture (decanted):

Associated Blank:

Associated Blank:

Analyst:

QA File Number:

GC 0383

[]: Result has been Corrected for Spike

CAS		ug/L	CAS	ug/L
		• • • • • • • • • • • • • • • • • • • •		
72-20-8	Endrin	100U		
58-89-9	gamma-BHC(Lindane)	500		
72-43-5	Methoxychior	500U		
8001-35-2	Toxaphene	10000		
5103-71-9	alpha-Chiordane	500U		
5103-74-2	gamma-Chiordane	500U		
76-44-8	Heptachlor	500		
1024-57-3	Heptachior Epoxide	500		

- U Compound was analyzed for but not detected. The number is the attainable detection limit for the sample.
- B Analyte was found in the reagent blank as well as the sample.
- J Indicates an estimated value.
- ND Not detected.
- A Aldol condensation product.
- D Secondary dilution.
- E ~ Exceeds initial calibration range.

Oak Ridge K-25 Site Analytical Chemistry Department Results of Analyses

Date Printed: 3-APR-1991 13:36

Analis ID: 900924-183

Project: G132 034S

Customer Sample ID: E1912

Customer: J. KESSNER/D.STOCKER

Date Sampled: 9-AUG-1990

Requisition Number:

Date Sample Received: 21-SEP-1990

Sampled By: Date Sample Completed:

Material Description: ORPHAN DRUM SAMPLES SOLIDS [] : Result has been Corrected for Spike

/. ∍r Procedure No.	Analysis	Result	Units	Analyst	QA File Number	Date Completed
EPA-3510 EPA-3510	PESTICIDES (EP-TOX) SOIL Prep (Pest- SW-846-Funnel)		ug/L			
07 EPA-6010 EPA-6010 EPA-6010 EPA-6010 EPA-6010 EPA-6010	Arsenic (TCLP) Barium (TCLP) Cadmium (TCLP) Chromium (TCLP) Lead (TCLP) Selenium (TCLP) Silver (TCLP)	4.4 <0.10 <0.0030 7.0 0.062 0.060 <0.010	mg/L mg/L mg/L mg/L mg/L mg/L	ML BAIN	01023A 01023A 01023A 01023A 01023A 01023A 01023A	23-0CT-1990 23-0CT-1990 23-0CT-1990 23-0CT-1990 23-0CT-1990 23-0CT-1990 23-0CT-1990
)8 EPA-7470	Mercury (TCLP)	<0.002	ug/L	MC ROSS	01018A2	25-0CT-1990
3 EPA-3540	Prep (PCB- SW-846-Sox)	c		JH KREIS	2243	24-NOV-1990
33 EPA-3550	Prep (BNA- SW-846-Sox)	С		JH KREIS	2173	15-NOV-1990
33 EPA-1311	TCLP Metals Extraction	C		JA ROUSE	xx	10-0CT-1990
03 EPA-9045	Hq	x		HH SULLIVAN	x	26-0CT-1990
73 EPA-1010	Flash Point Closed Cup	x	degrees F	HH SULLIVAN	x	26-0CT-1990

(BNA- SW-846-Sox)

/st

= JH KREIS = 12-NOV-1990 Extracted

e Weight Extracted (g) = 10.27

ent Solids = 94.5

plated Dried Weight (g) = 9.71

action Method = Soxhlet

action Solvent = Methlylene Chloride/Acetone

action Cleanup = Sodium Sulfate

Volume of Extract (mL) = 1

:iated Blank = 901115-071

(PCB- SW-846-Sox)

′st = JH KREIS

Extracted = 20-NOV-1990

e Weight Extracted (g) = 13.00

≥nt Solids = 94.5

Mated Dried Weight (g) = 12.28

ction Method = Soxhlet

action Solvent = Hexane

action Cleanup = Sulfuric Acid, Sodium Sulfate

Volume of Extract (mL) = 10

:iated Blank = 901120-177

***** Comments from the Wet Chemistry Laboratory *****

isufficient sample to complete the analysis for flash point and pH.

***** Comments from the Organic Mass Spectroscopy Laboratory *****

e not received in GC/MS lab....

Program Manager: D. L. Amburgey Date Approved:

.. ...

ANALYSIS DATA REPORT

Date Printed: 3-APR-1991 13:36

Analis ID: 900924-183 Customer Sample ID: E1912

Laboratory: Organic Mass Spectroscopy Laboratory Customer: J. KESSNER/D.STOCKER

File ID: 14337 Sample Matrix: SOIL Instrument ID: HP-5985 Requisition Number:

Authorized By: D. C. Canada Date Sample Received: 24-SEP-1990

BNA - Base/Neutral/Acid Compounds (TCL)

Date Extracted/Prepared: 20-NOV-1990

Preparation Procedure Number: EPA-3520

Analysis Procedure Number: BNA (CLP) NDP

Percent Moisture: 5 Dilution Factor: 1.0

Percent Moisture (decanted): Analyst: AK HEADRICK

Associated Blank: 901115-071 QA File Number: NA
[]: Result has been Corrected for Spike

CAS			ug/Kg	CAS			ug/Kg
100 05 3	DL1	R	1000.00	106-47-8	4-Chloroaniline		4000 181
108-95-2	Phenol					R	1000.00
111-44-4	bis(2-Chloroethyl)ether	R	1000.00	87-68-3	Hexachlorobutadiene	R	1000.UU
95-57-8	2-Chlorophenol	R	1000.UU	59-50-7	4-Chloro-3-methylphenol	R	1000 .U U
541- 73 -1	1,3-Dichlorobenzene	R	1000.00	91-57-6	2-Methylnaphthalene	R	1000.UU
106-46-7	1,4-Dichlorobenzene	R	1000.00	77-47-4	Hexachlorocyclopentadiene	R	1000.00
100-51-6	Benzyl Alcohol	R	1000.UU	88-06-2	2,4,6-Trichtorophenot	R	1000.UU
95-50-1	1,2-Dichlorobenzene	R	1000.UU	95-95-4	2,4,5-Trichlorophenol	R	5100.00
95-48-7	2-Methylphenol	R	1000.UU	91 - 58-7	2-Chloronaphthalene	R	1000.00
108-60-1	bis(2-Chloroisopropyl)ether	R	1000.UU	88-74-4	2-Nitroaniline	R	5100.00
106-44-5	4-Methylphenol	R	1000.UU	131-11-3	Dimethylphthalate	R	1000.00
621-64-7	N-Nitroso-di-n-propylamine	R	1000.UU	208-96-8	Acenaphthylene	R	1000.00
67-72-1	Hexachloroethane	R	1000.UU	99-09-2	3-Nitroaniline	R	5100.UU
98-95-3	Nitrobenzene	R	1000.UU	83-32-9	Acenaphthene	R	1000.UU
78-59-1	Isophorone	R	1000.UU	51-28-5	2,4-Dinitrophenol	R	5100 . UU
88-75-5	2-Nitrophenol	R	1000.UU	100-02-7	4-Nitrophenol	R	5100 .U U
105-67-9	2,4-Dimethylphenol	R	1000.UU	132-64-9	Dibenzofuran	R	1000.00
65-85-0	Benzoic Acid	R	5100.UU	121-14-2	2,4-Dinitrotoluene	R	1000.00
111-91-1	bis(2-Chloroethoxy)methane	R	1000 .ບບ	606-20-2	2,6-Dinitrotoluene	R	1000.00
120-83-2	2,4-Dichtorophenol	R	1000.00	84-66-2	Diethylphthalate	R	1000.UU
120-82-1	1,2,4-Trichlorobenzene	R	1000.ປປ	7005-72-3	4-Chlorophenyl-phenylether	R	1000.00
91-20-3	Naphthalene	R	1000.00	86-73-7	Fluorene	R	1000.UU

- U Compound was analyzed for but not detected. The number is the attainable detection limit for the sample.
- B Analyte was found in the reagent blank as well as the sample.
- J Indicates an estimated value.
- ND Not detected.
- A Aldol condensation product.
- D Secondary dilution.
- E Exceeds initial calibration range.

ANALYSIS DATA REPORT

Date Printed: 3-APR-1991 13:36

AnaLIS ID: 900924-183 Customer Sample ID: E1912

Laboratory: Organic Mass Spectroscopy Laboratory Customer: J. KESSNER/D.STOCKER

File ID: 14337 Sample Matrix: SOIL

Instrument ID: HP-5985 Requisition Number:

Authorized By: D. C. Canada Date Sample Received: 24-SEP-1990

BNA - Base/Neutral/Acid Compounds (TCL)

Date Extracted/Prepared: 20-NOV-1990 Date Analyzed: 27-NOV-1990
Preparation Procedure Number: EPA-3520 Analysis Procedure Number: BNA (CLP) NDP

Percent Moisture: 5 Dilution Factor: 1.0

Percent Moisture (decanted):

Associated Blank: 901115-071

Analyst: AK HEADRICK
QA File Number: NA

[]: Result has been Corrected for Spike

CAS			ug/Kg	CAS			ug/Kg
100-01-6	4-Nitroaniline	R	5100.00	53-70-3	Dibenz(a,h)anthracene	R	1000.00
534-52-1	4,6-Dinitro-2-methylphenol	R	5100.00	191-24-2	Benzo(g,h,i)perylene	R	1000.UU
86-30-6	N-Nitrosodiphenylamine	R	1000.UU				
101-55-3	4-Bromophenyl-phenylether	R	1000.UU				
118-74-1	Hexach Lorobenzene	R	1000.UU				
87-86-5	Pentachiorophenol	R	5100.UU				
85-01-8	Phenanthrene	R	1000.UU				
120-12-7	Anthracene	R	1000.00				
84-74-2	Di-n-butyiphthalate	R	1500B				
206-44-0	Fluoranthene	R	1000.UU				
129-00-0	Pyrene	R	1000.UU				
85-68-7	Butylbenzylphthalate	R	1000.UU				
91-94-1	3,3'-Dichlorobenzidine	R	2000.UU				
56-55-3	Benzo(a)anthracene	R	1000.UU				
117-81-7	bis(2-Ethylhexyl)phthalate	R	1000J				
218-01-9	Chrysene	R	1000.UU				
117-84-0	Di-n-octylphthalate	R	1000.UU				
205-99-2	Benzo(b)fluoranthene	R	1000.UU				
207-08-9	Benzo(k)fluoranthene	R	1000.UU				
50-32-8	Benzo(a)pyrene	R	1000.UU				
193-39-5	Indeno(1,2,3-cd)pyrene	R	1000.UU				

- U Compound was analyzed for but not detected. The number is the attainable detection limit for the sample.
- B Analyte was found in the reagent blank as well as the sample.
- J Indicates an estimated value.
- ND Not detected.
- A Aldol condensation product.
- D Secondary dilution.
- E Exceeds initial calibration range.

ANALYSIS DATA REPORT

Date Printed: 3-APR-1991 13:36

Analis ID: 900924-183 Customer Sample ID: E1912

Laboratory: Organic Mass Spectroscopy Laboratory Customer: J. KESSNER/D.STOCKER

File ID: >07084 Sample Matrix: SOIL

Instrument ID: 70-2 Requisition Number:
Authorized By: D. C. Canada Date Sample Received: 21-SEP-1990

VOA - Volatile Organic Compounds (TCL)

Date Extracted/Prepared: 4-OCT-1990 Date Analyzed: 4-OCT-1990

Preparation Procedure Number: Analysis Procedure Number: VOA (CLP) NDP
Percent Moisture: 6 Dilution Factor: 1.0

Percent Moisture (decanted):

Analyst: GL HUDDLESTON

Associated Blank: 901004-038 QA File Number: NA

[]: Result has been Corrected for Spike

CAS		ug/Kg	CAS		ug/Kg
	+				
74-87-3	Chloromethane	110	79-00-5	1,1,2-Trichloroethane	5 U
74-83-9	Bromomethane	110	71-43-2	Benzene	5 U
75-01-4	Vinyl Chloride	110	10061-02-6	trans-1,3-Dichloropropene	5U
75-00-3	Chloroethane	110	75-25-2	Bromoform	5 U
75-09-2	Methylene Chloride	4 JB	108-10-1	4-Methyl-2-pentanone	110
67-64-1	Acetone	97 B	591-78-6	2-Rexanone	78
75-15-0	Carbon Disulfide	5U	127-18-4	Tetrachloroethene	5 U
75-35-4	1,1-Dichloroethene	5 U	79-34-5	1,1,2,2-Tetrachloroethane	5 U
75-34-3	1.1-Dichloroethane	5U	108-88-3	Toluene	5U
540-59-0	1,2-Dichloroethene (total)	5 U	108-90-7	Chlorobenzene	5 U
67-66-3	Chloroform	5 U	100-41-4	Ethylbenzene	5U
107-06-2	1,2-Dichloroethane	5 U	100-42-5	Styrene	5บ
78-93-3	2-Butanone	110	1330-20-7	Xylene (total)	50
71-55-6	1,1,1-Trichloroethane	5U		•	
56-23-5	Carbon Tetrachioride	5 U			
108-05-4	Vinyl Acetate	110			
75-27-4	Bromodichloromethane	5 U			
78-87-5	1,2-Dichloropropane	5 U			
10061-01-5	cis-1,3-Dichloropropene	5บ			
79-01-6	Trichloroethene	5U			
124-48-1	Dibromochloromethane	5 U			

- U Compound was analyzed for but not detected. The number is the attainable detection limit for the sample.
- B Analyte was found in the reagent blank as well as the sample.
- J Indicates an estimated value.
- ND Not detected.
- A Aidol condensation product.
- D Secondary dilution.
- E Exceeds initial calibration range.

of 1

ANALYSIS DATA REPORT

Date Printed: 3-APR-1991 13:36

AnaLIS ID: 900924-183 Customer Sample ID: E1912

Customer: J. KESSNER/D.STOCKER Laboratory: Gas / Liquid Chromatography Laboratory

Sample Matrix: SOIL

File ID: Requisition Number: Instrument ID:

Authorized By: D. S. ZINGG Date Sample Received: 24-SEP-1990

PCB (TCL) SOIL

Date Extracted/Prepared: 30-NOV-1990 Date Analyzed: 29-NOV-1990

Preparation Procedure Number: Analysis Procedure Number: EPA-8080

Percent Moisture: Dilution Factor: 1.0 Percent Moisture (decanted): 0 Analyst: EK BROWN

> Associated Blank: QA File Number: GC 338

[]: Result has been Corrected for Spike

CAS		ug/Kg	CAS		ug/Kg
12674-11-2	Aroclor-1016	1100			
11104-28-2	Aroclor-1221	1100			
11141-16-5	Aroclor-1232	1100		_	
53469-21-9	Aroctor-1242	1100			
12672-29-6	Aroclor-1248	1100			
11097-69-1	Aroctor-1254	220U			
11096-82-5	Aroclor-1260	2200			

- U Compound was analyzed for but not detected. The number is the attainable detection limit for the sample.
- B Analyte was found in the reagent blank as well as the sample.
- J Indicates an estimated value.
- ND Not detected.
- A Aldol condensation product.
- D Secondary dilution.
- E Exceeds initial calibration range.

MARTIN MARIETTA ENERGY SYSTEMS, INC.

POST OFFICE BOX 2003 OAK RIDGE, TENNESSEE 37831-7440

June 19, 1991

Ms. Joan Kessner Westinghouse Hanford Company 2355 Stevens Drive Richland, Washington 99352

Dear Ms. Kessner:

Analytical Results Supplemental Package on Project 90-034: Underground Storage Tanks Sample Analysis

Attached are the final results on two (2) Underground Storage Tank Sample Analysis samples, Project 90-034, received into the Analytical Chemistry Department (ACD) laboratories on September 21, 1990. These results are a supplement to two previously submitted data packages for Project 90-034. Copies of the Chain of Custody records were included in the original package and have, therefore, not been included in this supplement.

The results are reported on ACD's AnaLis report format per letter dated December 20, 1990. There is not sufficient quantity of sample E1911 left to complete the semi-volatile organic analysis. The previous supplement stated that pesticide analysis was pending on sample E1912, however review of the Chain of Custody records reveals that pesticide analysis was not requested on this sample. The pesticide analysis request has been deleted from the AnaLis data base, and the results as requested are reflected in the attached AnaLis report. All other results are unchanged from the results previously reported. All data quality objectives were satisfied on this project. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signatures.

Sincerely,

Deborah L. Amburgey

Program Manager

Hanford Support Program

Clarence R. Kirkpatrick

Program Manager

Waste Management Analysis

Roy W. Morrow

IW. Spr

Department Manager

K-25 Site, Analytical Chemistry Department

Attachments

cc/attach: D.L.Amburgey

S.R.Smith - RC

SAMPLE IDENTIFICATION FOR

SUPPLEMENTAL DATA PACKAGE

PROJECT 90-034

Table 1.1 - Sample Identification Table for Supplemental Data Package for Project 90-034: Underground Storage Tank Sample Analysis

Date	OSM Sample	Lab Sample	Matrix	Comments
Group Rec.	ID	ID		
9/21/90	E1911	900924-182	liquid	
	E1912	900924-183	solid	

Oak Ridge K-25 Site Analytical Chemistry Department Results of Analyses

Date Printed: 7-JUN-1991 12:00

Analis ID: 900924-182

Project: G132 034L

Customer Sample ID: E1911

Date Sampled: 9-AUG-1990

Customer: J. KESSNER/D.STOCKER

Requisition Number:

Date Sample Received: 21-SEP-1990

Sampled By:

Date Sample Completed: 26-MAR-1991

Material Description: LIQUID FROM ORPHAN DRUMS

[]: Result has been Corrected for Spike

ctiv.				•.		QA	Date
umber	Procedure No.	Analysis	Result	Units	Analyst	File Number	Completed
90708	EPA-6010	Arsenic (TCLP)	<0.050	mg/L	ML BAIN	01226A	26-DEC-1990
	EPA-6010	Barium (TCLP)	2.6	mg/L	ML BAIN	01226A	26-DEC-1990
	EPA-6010	Cadmium (TCLP)	<0.0030	mg/L	ML BAIN	01226A	26-DEC-1990
	EPA-6010	Chromium (TCLP)	<0.010	mg/L	ML BAIN	01226A	26-DEC-1990
	EPA-6010	Lead (TCLP)	<0.050	mg/L	ML BAIN	01226A	26-DEC-1990
	EPA-6010	Selenium (TCLP)	<0.050	mg/L	ML BAIN	01226A	26-DEC-1990
	EPA-6010	Silver (TCLP)	<0.010	mg/L	ML BAIN	01226A	26-DEC-1990
03208	EPA-7470	Mercury (TCLP)	<0.0002	ug/L	SA BURGESS	01008E	8-0CT-1990
³ 32508	EPA-3520	Prep (PCB- SW-846-Liq/liq)	c		MF MCMYLER	1840	20-DEC-1990
32608	EPA-3510	Prep (Pest- SW-846-Funnel)	С		MF MCMYLER	1840	20-DEC-1990
·34007	EPA-3520	Prep (BNA- SW-846-Liq/liq)	N/A		MF MCMYLER	N/A	20-DEC-1990
'71007	EPA-1311	TCLP Extraction	С		BD HARRIS	90-8	17-DEC-1990
182107	EPA-160.3	Total Solids	20560	mg/L	RM SALINAS	90-24	3-0CT-1990
182507	EPA-9040	Н	5.5		RM SALINAS	90-18	28-SEP-1990
186807	EPA-1010	Flash Point Closed Cup	R >145	degrees F		90-34	29-0CT-1990

>rep (BNA- SW-846-Liq/liq)

Analyst

= MF MCMYLER

)ate Extracted

= 19-DEC-1990

Prep (PCB- SW-846-Liq/liq)

Analyst

= MF MCMYLER

= 7

Date Extracted

= 20-DEC-1990

Sample Volume Extracted (mL) = 92

Extraction Method

= Separatory Funnel Extraction Solvent = Methylene Chloride

= Sodium Sulfate Extraction Cleanup

Final Volume of Extract (mL) = 10.0

Associated Blank

= 901220-194

^{*****} Comments from the Wet Chemistry Laboratory *****

Insufficient sample to complete the analysis for flash point.

21

***** Comments from the Organic Mass Spectroscopy Laboratory *****

ample not received in GC/MS lab...

Program Manager: D. L. Amburgey
Date Approved: 26-MAR-1991

age 1 of 2

ANALYSIS DATA REPORT

Date Printed: 7-JUN-1991 12:00

Analis ID: 900924-182 Customer Sample ID: E1911

Laboratory: Organic Mass Spectroscopy Laboratory Customer: J. KESSNER/D.STOCKER

File ID: Sample Matrix: WASTE

Instrument ID: Requisition Number:

Authorized By: D. C. Canada Date Sample Received: 24-SEP-1990

BNA Base/Neutral/Acid Organic Compounds (TCL)

Date Extracted/Prepared: 20-NOV-1990 Date Analyzed: 20-NOV-1990

Preparation Procedure Number: EPA-3520 Analysis Procedure Number: BNA (CLP) NDP

Percent Moisture: Dilution Factor: 1.0

Percent Moisture (decanted): Analyst: DC CANADA

Associated Blank: QA File Number: NA

[]: Result has been Corrected for Spike

CAS		ug/Ĺ	CAS		ug/L
108-95-2	Phenol	NA	106-47-8	4-Chloroaniline	NA
111-44-4	bis(2-Chloroethyl)ether	NA	87-68-3	Hexachlorobutadiene	NA
95-57-8	2-Chtorophenol	NA	59-50-7	4-Chloro-3-methylphenol	NA
541-73-1	1,3-Dichlorobenzene	NA	91-57-6	2-Methyinaphthalene	NA
106-46-7	1,4-Dichlorobenzene	NA	77-47-4	Hexachlorocyclopentadiene	NA
100-51-6	·	NA	88-06-2	2,4,6-Trichlorophenol	NA
95-50-1	1,2-Dichlorobenzene	NA	95-95-4	2,4,5-Trichlorophenol	NA
95-48-7	2-Methylphenol	NA	91 - 58-7	2-Chloronaphthalene	NA
108-60-1	bis(2-Chloroisopropyl)ether	NA	88-74-4	2-Nitroaniline	NA
106-44-5	4-Methylphenol	NA	131-11-3	Dimethylphthalate	NA
621-64-7	N-Nitroso-di-n-propylamine	NA	208-96-8	Acenaphthylene	NA
67-72-1	Hexachloroethane	NA	99-09-2	3-Nitroaniline	NA
98-95-3	Nitrobenzene	NA	83-32-9	Acenaphthene	NA
78-59-1	Isophorone	NA	51-28-5	2,4-Dinitrophenol	NA
88-75 - 5	2-Nitrophenol	NA	100-02-7	4-Nitrophenol	NA
105-67-9	2,4-Dimethylphenol	NA	132-64-9	Dîbenzofuran	NA
65-85-0	Benzoic Acid	NA	121-14-2	2,4-Dinitrotoluene	NA
111-91-1	bis(2-Chloroethoxy)methane	NA	606-20-2	2,6-Dinitrotoluene	NA
120-83-2	2,4-Dichlorophenol	NA	84-66-2	Diethylphthalate	NA
120-82-1	1,2,4-Trichlorobenzene	NA	7005-72-3	4-Chlorophenyl-phenylether	NA
91-20-3	Naphthalene	NA	86-73-7	Fluorene	NA

- U Compound was analyzed for but not detected. The number is the attainable detection limit for the sample.
- B Analyte was found in the reagent blank as well as the sample.
- J Indicates an estimated value.
- ND Not detected.
- A Aldol condensation product.
- D Secondary dilution.
- E Exceeds initial calibration range.

age 2 of 2

ANALYSIS DATA REPORT

Date Printed: 7-JUN-1991 12:00

Analis ID: 900924-182 Customer Sample ID: E1911

Laboratory: Organic Mass Spectroscopy Laboratory Customer: J. KESSNER/D.STOCKER

File ID: Sample Matrix: WASTE

Instrument ID: Requisition Number:

Authorized By: D. C. Canada Date Sample Received: 24-SEP-1990

BNA Base/Neutral/Acid Organic Compounds (TCL)

Date Extracted/Prepared: 20-NOV-1990 Date Analyzed: 20-NOV-1990

Preparation Procedure Number: EPA-3520 Analysis Procedure Number: BNA (CLP) NDP

Percent Moisture: Dilution Factor: 1.0

Percent Moisture (decanted):

Associated Blank:

Associated Blank:

QA File Number: NA

[] : Result has been Corrected for Spike

CAS		ug/L	CAS		ug/L
100-01-6	4-Nitroaniline	NA	53-70-3	Dibenz(a,h)anthracene	NA
534-52-1	4,6-Dinitro-2-methylphenol	NA	191-24-2	Benzo(g,h,i)perylene	NA
86-30-6	N-Nitrosodiphenylamine	NA			
101-55-3	4-Bromophenyl-phenylether	NA			
118-74-1	Hexachlorobenzene	NA			
87-86-5	Pentachlorophenol	na			
85-01-8	Phenanthrene	NA			
120-12-7	Anthracene	HA			
84-74-2	Dî-n-butylphthalate	NA			
206-44-0	Fluoranthene	NA			
129-00-0	Pyrene	NA			
85-68-7	Butylbenzylphthalate	NA			
91-94-1	3,3'-Dichlorobenzidine	NA			
56-55-3	Benzo(a)anthracene	NA			
117-81-7	bis(2-Ethylhexyl)phthalate	NA			
218-01-9	Chrysene	NA			
117-84-0	Di-n-octylphthalate	NA			
205-99-2	Benzo(b)fluoranthene	NA			
207-08-9	Benzo(k)fluoranthene	NA			
50-32-8	Benzo(a)pyrene	NA			
193-39-5	Indeno(1,2,3-cd)pyrene	NA			

- U Compound was analyzed for but not detected. The number is the attainable detection limit for the sample.
- B Analyte was found in the reagent blank as well as the sample.
- J Indicates an estimated value.
- ND Not detected.
- A Aldol condensation product.
- D Secondary dilution.
- E Exceeds initial calibration range.

age 1 of 1

ANALYSIS DATA REPORT

Date Printed: 7-JUN-1991 12:00

Analis ID: 900924-182 Customer Sample ID: E1911

Laboratory: Organic Mass Spectroscopy Laboratory Customer: J. KESSNER/D.STOCKER

File ID: >07119 Sample Matrix: WASTE

Instrument ID: 70-2 Requisition Number:

Authorized By: D. C. Canada Date Sample Received: 21-SEP-1990

VOA - Volatile Organic Compounds (TCL)

Date Extracted/Prepared: 8-OCT-1990

Preparation Procedure Number: Analysis Procedure Number: VOA (CLP) NDP

Percent Moisture: Dilution Factor: 5

Percent Moisture (decanted):

Analyst: GL HUDDLESTON

Associated Blank: 901008-116 QA File Number: NA

[] : Result has been Corrected for Spike

CAS		ug/L	CAS		ug/L
74-87-3	Chloromethane	500	70-00-5	1,1,2-Trichloroethane	250
74-83-9	Bromomethane	50U	71-43-2	Renzene	25U
•	-1	50U		=	25U
	Vinyl Chloride			trans-1,3-Dichloropropene	
75-00-3	Chloroethane	50 u	75-25-2	Bromoform	25 U
75-09-2	Methylene Chloride	30 B	108 - 10-1	4-Methyl-2-pentanone	500
67-64-1	Acetone	290	591-78-6	2-Hexanone	50บ
75 - 15-0	Carbon Disulfide	250	127-18-4	Tetrachloroethene	250
75 -3 5-4	1,1-Dichloroethene	2 50	79-34-5	1,1,2,2-Tetrachloroethane	25U
75-34-3	1,1-Dichloroethane	2 50	108-88-3	Toluene	55
540-59-0	1,2-Dichloroethene (total)	250	108-90-7	Chlorobenzene	250
67-66-3	Chloroform	250	100-41-4	Ethylbenzene	25 U
107-06-2	1,2-Dichloroethane	250	100-42-5	Styrene	25บ
78-93-3	2-Butanone	50U	1330-20-7	Xylene (total)	39 J
71-55-6	1,1,1-Trichloroethane	25 U			
56-23-5	Carbon Tetrachloride	25 U			
108-05-4	Vinyl Acetate	50บ			
75-27-4	Bromodichloromethane	25ช			
78-87-5	1,2-Dichloropropane	250			
10061-01-5	cis-1,3-Dichloropropene	25 U			
79-01-6	Trichloroethene	250			
124-48-1	Dibromochloromethane	250			

- U Compound was analyzed for but not detected. The number is the attainable detection limit for the sample.
- B Analyte was found in the reagent blank as well as the sample.
- J Indicates an estimated value.
- ND Not detected.
- A Aldol condensation product.
- D Secondary dilution.
- E Exceeds initial calibration range.

Date Printed: 7-JUN-1991 12:00

AnaLIS ID: 900924-182

Customer Sample ID: E1911

Laboratory: Gas / Liquid Chromatography Laboratory

Customer: J. KESSNER/D.STOCKER

File ID:

Sample Matrix: WASTE

Instrument ID:

Requisition Number:

Authorized By: D. S. ZINGG

Date Sample Received: 24-SEP-1990

PCB (TCL)

Date Extracted/Prepared: 28-DEC-1990

Date Analyzed: 27-DEC-1990

Preparation Procedure Number:

Analysis Procedure Number: EPA-8080

100.0

Percent Moisture: Percent Moisture (decented): Dilution Factor:

Analyst: RE HOWARD

Associated Blank:

QA File Number: GC 0383

[] : Result has been Corrected for Spike

CAS		ug/L	CAS	ug/L
12674-11-2	Aroclor-1016	5000		
11104-28-2	Aroclor-1221	500U		
11141-16-5	Aroclor-1232	500U		
53469-21-9	Aroctor-1242	500U		
12672-29-6	Aroctor-1248	500 U		
11097-69-1	Aroctor-1254	11000		
11096-82-5	Aroctor-1260	11000		

- U Compound was analyzed for but not detected. The number is the attainable detection limit for the sample.
- B Analyte was found in the reagent blank as well as the sample.
- J Indicates an estimated value.
- ND Not detected.
- A Aldoi condensation product.
- D Secondary dilution.
- E Exceeds initial calibration range.

Date Printed: 7-JUN-1991 12:00

AnaLIS ID: 900924-182

Customer Sample ID: E1911

Laboratory: Gas / Liquid Chromatography Laboratory

Customer: J. KESSNER/D.STOCKER

File ID: GC 0383

Sample Matrix: WASTE Requisition Number:

Instrument ID: Authorized By: D. S. ZINGG

Date Sample Received: 24-SEP-1990

PESTICIDES (EP-TOX)

Date Extracted/Prepared:

Date Analyzed: 27-DEC-1990

Preparation Procedure Number: EPA-3510

Analysis Procedure Number: EPA-8080

Percent Moisture:

Dilution Factor:

100

Percent Moisture (decanted):

Analyst: DS ZINGG

Associated Blank:

QA File Number: GC 0383

[]: Result has been Corrected for Spike

CAS		ug/L	CAS		ug/L

72-20-8	Endrin	1000			
58-89-9	gamma-BHC(Lindane)	500			
72-43-5	Methoxychlor	50 00			
8001-35-2	Toxaphene	10000			
5103-71-9	alpha-Chlordane	5000			
5103-74-2	gamma-Chlordane	, 50 0U			
76-44-8	Reptachlor	500			
1024-57-3	Heptachlor Epoxide	50 U			

- U Compound was analyzed for but not detected. The number is the attainable detection limit for the sample.
- B Analyte was found in the reagent blank as well as the sample.
- J Indicates an estimated value.
- ND Not detected.
- A Aldol condensation product.
- D Secondary dilution.
- E Exceeds initial calibration range.

Date Printed: 13-JUN-1991 13:10

Oak Ridge K-25 Site Analytical Chemistry Department Results of Analyses

AnaLIS ID: 900924-183

Project: G132 034S

Requisition Number:

Customer Sample ID: E1912

Date Sampled: 9-AUG-1990

Customer: J. KESSNER/D.STOCKER

Sampled By:

Date Sample Received: 21-SEP-1990 Date Sample Completed: 13-JUN-1991

Material Description: ORPHAN DRUM SAMPLES SOLIDS

II : Result has been Corrected for Spike

ctiv. umber	Procedure No.	Analysis	Result	Units	Analyst	QA File Number	Date Completed
90207	EPA-6010	Arsenic (TCLP)	4.4	mg/L	ML BAIN	01023A	23-0CT - 1990
	EPA-6010	Barium (TCLP)	<0.10	mg/L	ML BAIN	01023A	23-0CT-1990
	EPA-6010	Cadmium (TCLP)	<0.0030	mg/L	ML BAIN	01023A	23-0CT-1990
	EPA-6010	Chromium (TCLP)	7.0	mg/L	ML BAIN	01023A	23-0CT-1990
	EPA-6010	Lead (TCLP)	0.062	mg/L	ML BAIN	01023A	23-0CT-1990
	EPA-6010	Selenium (TCLP)	0.060	mg/L	ML BAIN	01023A	23-0CT-1990
	EPA-6010	Silver (TCLP)	<0.010	mg/L	ML BAIN	01023A	23-0CT-1990
33 208	EPA-7470	Mercury (TCLP)	<0.002	ug/L	MC ROSS	01018A2	25-0CT-1990
51003	EPA-3540	Prep (PCB- SW-846-Sox)	С		JH KREIS	2243	24-NOV-1990
35003	EPA-3550	Prep (BNA- SW-846-Sox)	С		JH KREIS	2173	15-NOV-1990
3603	EPA-1311	TCLP Metals Extraction	С		JA ROUSE	xx	10-0CT-1990
\$2603	EPA-9045	рH	x		HH SULLIVAN	x	26-0CT-1990
:6803	EPA-1010	Flash Point Closed Cup	x	degrees F	HH SULLIVAN	x	26-0CT-1990

rep (BNA- SW-846-Sox)

alyst = JH KREIS te Extracted = 12-NOV-1990

.mple Weight Extracted (g) = 10.27 rcent Solids = 94.5 .lculated Dried Weight (g) = 9.71 traction Method = Soxhlet

traction Solvent = Methlylene Chloride/Acetone

traction Cleanup = Sodium Sulfate

nal Volume of Extract (mL) = 1

sociated Blank = 901115-071

ep (PCB- SW-846-Sox)

alyst = JH KREIS te Extracted = 20-NOV-1990

mple Weight Extracted (g) = 13.00 rcent Solids = 94.5 lculated Dried Weight (g) = 12.28 traction Method = Soxhlet traction Solvent = Hexane

traction Cleanup = Sulfuric Acid, Sodium Sulfate

nal Volume of Extract (mL) = 10

***** Comments from the Wet Chemistry Laboratory *****

Insufficient sample to complete the analysis for flash point and pH.

HS

***** Comments from the Organic Mass Spectroscopy Laboratory *****
ample not received in GC/MS lab....

Program Manager: D. L. Amburgey
Date Approved: 13-JUN-1991

Date Printed: 13-JUN-1991 13:10

AnaLIS ID: 900924-183

Laboratory: Organic Mass Spectroscopy Laboratory

Sample Matrix: SOIL

Customer Sample ID: E1912

Customer: J. KESSNER/D.STOCKER

File ID: 14337

Instrument ID: HP-5985

Requisition Number:

Authorized By: D. C. Canada

Date Sample Received: 24-SEP-1990

BNA - Base/Neutral/Acid Compounds (TCL)

Date Extracted/Prepared: 20-NOV-1990

Date Analyzed: 27-NOV-1990

Preparation Procedure Number: EPA-3520

Analysis Procedure Number: BNA (CLP) NDP Dilution Factor: 1.0

Percent Moisture:

Percent Moisture (decented):

Analyst: AK HEADRICK

Associated Blank: 901115-071

QA File Number: NA

[]: Result has been Corrected for Spike

CAS			ug/Kg	CAS			ug/Kg

108-95-2	Phenol	R	1000.00	106-47-8	4-Chloroaniline	R	1000.UU
111-44-4	bis(2-Chloroethyl)ether	R	1000.ນປ	87-68-3	Hexachlorobutadiene	R	1000.00
95-57-8	2-Chlorophenol	R	1000.UU	59-50-7	4-Chloro-3-methylphenol	R	1000.00
541-73-1	1,3-Dichlorobenzene	R	1000.UU	91-57-6	2-Methylnaphthalene	R	1000.00
106-46-7	1,4-Dichlorobenzene	R	1000.00	77-47-4	Hexachlorocyclopentadiene	R	1000.00
100-51-6	Benzyl Alcohol	R	1000.00	88-06-2	2,4,6-Trichlorophenol	R	1000.00
95-50-1	1,2-Dichlorobenzene	R	1000.ນປ	95-95-4	2,4,5-Trichlorophenol	R	5100.UU
95-48-7	2-Methylphenol	R	1000.00	91-58-7	2-Chloronaphthalene	R	1000.ນປ
108-60-1	bis(2-Chloroisopropyl)ether	R	1000,00	88-74-4	2-Nitroaniline	R	5100.00
106-44-5	4-Methylphenol	R	1000.00	131-11-3	Dimethylphthalate	R	1000.00
621-64-7	N-Nitroso-di-n-propylamine	R	1000.00	208-96-8	Acenaph thy lene	R	1000.00
67-72-1	Hexachi oroethane	R	1000.00	99-09-2	3-Nitroaniline	R	5100.00
98-95-3	Nitrobenzene	R	1000.UU	83-32-9	Acenaphthene	R	1000.UU
78-59-1	Isophorone	R	1000.ບປ	51-28-5	2,4-Dinitrophenol	R	5100.UU
88-75-5	2-Nitrophenol	R	1000.80	100-02-7	4-Nitrophenol	R	5100.ບບ
105-67-9	2,4-Dimethylphenol	R	1000,00	132-64-9	Dibenzofuran	R	1000.00
65-85-0	Benzoic Acid	R	5100.00	121-14-2	2,4-Dinitrotoluene	R	1000.00
111-91-1	bis(2-Chloroethoxy)methane	R	1000.00	606-20-2	2,6-Dinitrotoluene	R	1000.UU
120-83-2	2,4-Dichlorophenol	R	1000.បប	84-66-2	Diethylphthalate	R	1000.00
120-82-1	1,2,4-Trichlorobenzene	R	1000.ນປ	7005~72-3	4-Chlorophenyl-phenylether	R	1000.00
91-20-3	Naphthalene	R	1000.UU	86-73-7	Fluorene	R	1000.UU

- U Compound was analyzed for but not detected. The number is the attainable detection limit for the sample.
- B Analyte was found in the reagent blank as well as the sample.
- J Indicates an estimated value.
- ND Not detected.
- A Aldol condensation product.
- D Secondary dilution.
- E Exceeds initial calibration range.

Date Printed: 13-JUN-1991 13:10

Analis ID: 900924-183 Customer Sample ID: E1912

Laboratory: Organic Mass Spectroscopy Laboratory Customer: J. KESSNER/D.STOCKER

File ID: 14337 Sample Matrix: SOIL

Instrument ID: HP-5985 Requisition Number:

Authorized By: D. C. Canada Date Sample Received: 24-SEP-1990

BNA - Base/Neutral/Acid Compounds (TCL)

Date Extracted/Prepared: 20-NOV-1990

Preparation Procedure Number: EPA-3520

Percent Moisture: 5

Date Analyzed: 27-NOV-1990

Analysis Procedure Number: BNA (CLP) NDP

Dilution Factor: 1.0

Percent Moisture (decanted):

Analyst: AK HEADRICK

Associated Blank: 901115-071 QA File Number: NA

[] : Result has been Corrected for Spike

CAS			ug/Kg	CAS			ug/Kg
		-					
100-01-6	4-Nitroaniline	R	5100.00	53-70-3	Dibenz(a,h)anthracene	R	1000.UU
534-52-1	4,6-Dinitro-2-methylphenol	R	5100.00	191-24-2	Benzo(g,h,i)perylene	R	1000.UU
86-30-6	N-Nitrosodiphenylamine	R	1000.00				
101-55-3	4-Bromophenyl-phenylether	R	1000.00				
118-74-1	Hexach Lorobenzene	R	1000.00				
87-86-5	Pentachlorophenol	R	5100.UU				
85-01-8	Phenanthrene	R	1000.08				
120-12-7	Anthracene	R	1000.ນປ				
84-74-2	Di-n-butylphthalate	R	1500B				
206-44-0	Fluoranthene	R	1000.00				
129-00-0	Pyrene	R	1000.00				
85-68-7	Butylbenzylphthalate	R	1000.UU				
91-94-1	3,3'-Dichlorobenzidine	R	2000.UU		-		
56-55-3	Benzo(a)anthracene	R	1000.UU				
117-81-7	bis(2-Ethylhexyl)phthalate	R	1000J				
218-01-9	Chrysene	R	1000.ນປ				
117-84-0	Di-n-octylphthalate	R	1000.ນມ				
205-99-2	Benzo(b)fluoranthene	R	1000.UU				
207-08-9	Benzo(k)fluoranthene	R	1000.00				
50-32-8	Benzo(a)pyrene	R	1000.00				
193-39-5	Indeno(1,2,3-cd)pyrene	R	1000.00				

- U Compound was analyzed for but not detected. The number is the attainable detection limit for the sample.
- B Analyte was found in the reagent blank as well as the sample.
- J Indicates an estimated value.
- ND Not detected.
- A Aldol condensation product.
- D Secondary dilution.
- E Exceeds initial calibration range.

'age 1 of 1

ANALYSIS DATA REPORT

Date Printed: 13-JUN-1991 13:10

Analis ID: 900924-183 Customer Sample ID: E1912

Laboratory: Organic Mass Spectroscopy Laboratory Customer: J. KESSNER/D.STOCKER

File ID: >07084 Sample Matrix: SOIL

Instrument ID: 70-2 Requisition Number:

Authorized By: D. C. Canada Date Sample Received: 21-SEP-1990

VOA - Volatile Organic Compounds (TCL)

Associated Blank: 901004-038 QA File Number: NA

[] : Result has been Corrected for Spike

CAS		ug/Kg	CAS		ug/Kg
74-87-3	Chloromethane	110	79-00-5	1,1,2-Trichloroethane	5U
74-83-9	Bromomethane	110	71-43-2	Benzene	5U
75-01-4	Vinyl Chloride	110	10061-02-6	trans-1,3-Dichloropropene	5 U
75-00-3	Chloroethane	110	75-25-2	Bromoform	5 U
75-09-2	Methylene Chloride	4 JB	108-10-1	4-Methyl-2-pentanone	110
67-64-1	Acetone	97 B	591-78-6	2-Hexanone	78
75-15-0	Carbon Disulfide	5U	127-18-4	Tetrachloroethene	5ນ
75-35-4	1,1-Dichloroethene	50	79-34-5	1,1,2,2-Tetrachloroethane	5 u
75-34-3	1,1-Dichloroethane	5 U	108-88-3	Toluene	50
540-59-0	1,2-Dichloroethene (total)	5 U	108-90-7	Chlorobenzene	5ບ
67-66-3	Chloroform	50	100-41-4	Ethylbenzene	5 U
107-06-2	1,2-Dichloroethane	5 U	100-42-5	Styrene	5U
78-93-3	2-Butanone	110	1330-20-7	Xylene (total)	5U
71-55-6	1,1,1-Trichloroethane	5U			
56-23-5	Carbon Tetrachloride	5 U			
108-05-4	Vinyl Acetate	11ប			
75-27-4	Bromodichloromethane	5ช			
78-87-5	1,2-Dichloropropane	50			

Data Reporting Qualifiers:

U - Compound was analyzed for but not detected. The number is the attainable detection limit for the sample.

5U

5U

5U

- B Analyte was found in the reagent blank as well as the sample.
- J Indicates an estimated value.

10061-01-5 cis-1,3-Dichloropropene

124-48-1 Dibromochloromethane

79-01-6 Trichloroethene

- ND Not detected.
- A Aldol condensation product.
- D Secondary dilution.
- E Exceeds initial calibration range.

age 1 of 1

ANALYSIS DATA REPORT

Date Printed: 13-JUN-1991 13:10

Analis ID: 900924-183 Customer Sample ID: E1912

Laboratory: Gas / Liquid Chromatography Laboratory Customer: J. KESSNER/D.STOCKER

File ID: Sample Matrix: SOIL

Instrument ID: Requisition Number:

Authorized By: D. S. ZINGG Date Sample Received: 24-SEP-1990

PCB (TCL) SOIL

Date Extracted/Prepared: 30-NOV-1990

Preparation Procedure Number: Analysis Procedure Number: EPA-8080

Percent Moisture: 15.5 Dilution Factor: 1.0

Percent Moisture (decanted): 0 Analyst: EK BROWN
Associated Blank: QA File Number: GC 338

[] : Result has been Corrected for Spike

CAS		ug/Kg	CAS	ug/Kg
12674-11-2	Aroclor-1016	110U		
11104-28-2	Aroclor-1221	110u		
11141-16-5	Aroclor-1232	1100		
53469-21-9	Aroclor-1242	110U		
12672-29-6	Aroclor-1248	1100		
11097-69-1	Aroclor-1254	2200		
11096-82-5	Aroclor-1260	2200		

- U Compound was analyzed for but not detected. The number is the attainable detection limit for the sample.
- B Analyte was found in the reagent blank as well as the sample.
- J Indicates an estimated value.
- ND Not detected.
- A Aldol condensation product.
- D Secondary dilution.
- E Exceeds initial calibration range.